



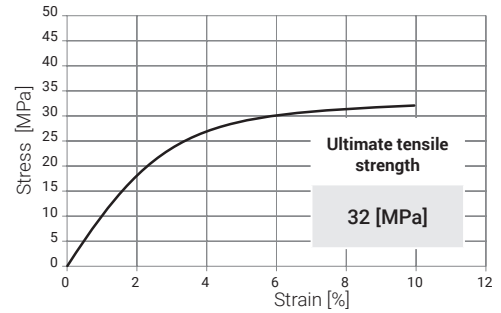
PA12 Smooth ^{v2}

High surface quality

Good quality to price ratio | Excellent surface quality and high level of recreated details | High chemical resistance



Tensile testing



General information

Method

Material type	Nylon 12
Granulation	18 - 90 [µm]
Color	Navy Grey
Material refreshing ratio ¹	26 [%]
Compatible with ²	Lisa & Lisa Pro

Parameters

Tensile Strength	32 [MPa]	PN-EN ISO 527-2:2012
Elongation at Break	10 [%]	PN-EN ISO 527-2:2012
Impact resistance (Charpy test / unnotched)	16 [KJ/m ²]	PN-EN ISO 179-1/1eU:2010
Shore hardness in type D scale	74	PN-EN ISO 868:2005

Thermal properties

Melting point	185 [°C]	Internal procedure
Printout density	0.92 [g/cm ³]	PN-EN ISO 845:2010

Applications

Rapid prototyping, detailed objects, functional parts of highest quality, low volume production of low stress parts, working mechanisms.

Functions

High details, smooth surface, high chemical resistance, regular mechanical properties.

¹ Material refreshing ratio - percent of Fresh powder which has to be mixed with Used (unsintered) powder - to be reused during next print.

² Available as part of the appropriate profile purchased.

Charpy U- and V-notched impact testing

N°	notch	KJ/m ²
1.	U	5.23
2.	V	3.28

Charpy impact test results for specimens tested using pendulum of maximum energy of 50 [J], weight of 6.8 [kg] and length of 380 [mm].

Surface roughness

Roughness parameter	side surface	top surface
Ra	9.680 [µm]	6.470 [µm]
Rz	54.184 [µm]	31.633 [µm]

Roughness of test specimens surfaces printed with layer thickness of 100 [µm].

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PA11 Onyx

Superior durability and resistance

High resistance against impacts | Moderate elasticity | Good chemical resistance | Dedicated only for LISA Pro



General information

General information		Method
Material type	Nylon 11	
Granulation	20 - 80 [µm]	
Color	Black	
Material refreshing ratio ¹	50 [%]	
Compatible with	Lisa Pro	

Parameters

Tensile Strength	48 [MPa]	PN-EN ISO 527-2:2012
Flexural Strength	62 [MPa]	PN-EN ISO 178:2011
Elongation at Break	55 [%]	PN-EN ISO 37:2007
Impact resistance (Charpy test / unnotched)	179 [KJ/m ²]	PN-EN ISO 179-1/1eU:2010
Shore hardness in type D scale	76	PN-EN ISO 868:2005
Printout density	1.03 [g/cm ³]	PN-EN ISO 845:2010
Printout water absorption	0,5 [%]	PN-EN ISO 62:2008

Thermal properties

Melting point	200 [°C]	PN-EN ISO 11357-3:2018
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Applications

Final prototypes with great mechanical properties, snap-fit designs, end-use parts, living hinges, jigs, fixtures and tooling.

Functions

High mechanical strength, high toughness (impact strength), dimension stability, high ductility, bio-sourced (castor oil).

¹ Material refreshing ratio - percent of Fresh powder which has to be mixed with Used (unsintered) powder - to be reused during next print.

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PA11 ESD

ESD safe

Bio-sourced nylon material with heat resistance and ESD functionality.
Dedicated for electrostatic safe parts for electronic and automotive industries.



General properties

General properties		Method
Melting point	204 [°C]	internal
Heat deflection temperature at 1.8 MPa	103 [°C]	PN-EN ISO 75-2:2013-06
Printout density	1.03 [g/cm ³]	internal
Printout water absorption	0.16 [%]	PN-EN ISO 62:2008
Colour	Grey	internal
Refresh ratio ¹	60 [%]	internal
Dedicated for	Lisa Pro ²	
Nitrogen needed	Yes	

Mechanical properties

Tensile Strength	46/50 ⁷ [MPa]	PN-EN ISO 527-1:2012
Tensile Modulus (Young)	1850/2080 ⁷ [MPa]	PN-EN ISO 527-1:2012
Flextural Strength	56 [MPa]	PN-EN ISO 178:2011
Flexrtual Modulus	1240 [MPa]	PN-EN ISO 178:2011
Elongation at Break	27 [%]	PN-EN ISO 527-1:2012
Impact strenght (Charpy - unnotched)	59C [kJ/m ²]	PN-EN ISO 179-1:2010
Shore Hardness in scale	D76	PN-EN ISO 868:2005

ESD properties

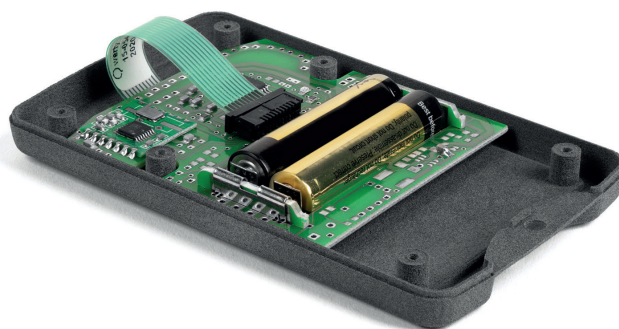
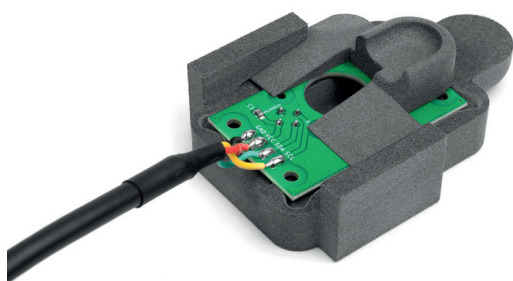
Specific volume resistance	1.0x10 ⁵ [Ω]	IEC 62631-3-1
Specific surface resistance	5.3x10 ⁴ [Ω]	IEC 62631-3-2

Applications

Tools and testers in electronics production, electronic casing, automotive parts, high-accuracy parts.

Functions

ESD safe material, better thermal properties, dimension stability, bio-sourced from castor oil.



¹ Refresh ratio is the amount of refreshing powder that is required to be mixed after the printing with unsintered material.

² Can be used only with Sinterit Studio Profiles or Advanced.

⁷ Tested on virgin powder.

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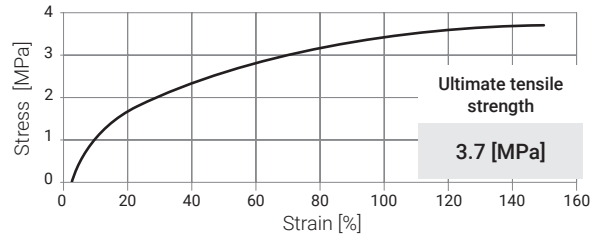
Flexa Grey

Functional flexibility

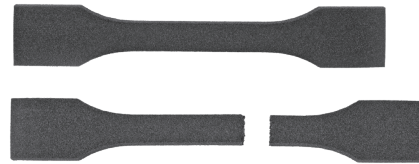
Flexible prints with increased extensibility | Adjustable hardness | 100% reusable



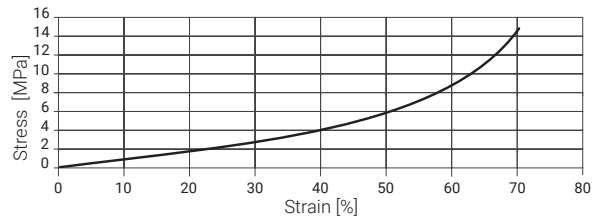
Tensile testing



While the tensile stress does not exceed 1.8 [MPa], after load release, the test specimens retain their shape, with no external damage observed (e.g. fractures). The test specimens fracture when max tensile stress of 3.7 [MPa] is applied.



Compression testing



While the compressive stress does not exceed 3.5 [MPa], after load release, the test specimens retain their shape, with no external damage observed (e.g. fractures).

After applying max compressive stress of 14.65 [MPa] and releasing the compressive load, the test specimens irreversibly change their volume from: 14.50 [mm] x 14.50 [mm] x 15.30 [mm] to: 14.85 [mm] x 14.85 [mm] x 14.85 [mm].



General information

Material type	TPU
Granulation	20 - 105 [µm]
Color	Grey
Material refreshing ratio ¹	0 [%]
Compatible with ²	Lisa & Lisa Pro

Method

Parameters

Tensile Strength	3.7 [MPa]	PN-EN ISO 37:2007
Elongation at Break	136 [%]	PN-EN ISO 37:2007
Shore hardness in type A scale	70 / 90 ³	PN-EN ISO 868:2005

Thermal properties

Softening point (Vicat method type A50)	67.6 [°C]	PN-EN ISO 306:2014-02
Melting point	160 [°C]	Internal procedure
Printout density	0.74 [g/cm ³]	PN-EN ISO 845:2010
Printout water absorption	9.1 [%]	PN-EN ISO 62:2008

Applications

Easy elastic parts, vibration dampers, general prototyping of elastic parts.

Functions

Easy to process rubber, adjustable hardness (set up in Sinterit Studio).

¹ Material refreshing ratio - percent of Fresh powder which has to be mixed with Used (unsintered) powder - to be reused during next print.

FLEXA has 100 [%] of usability. Although to keep the parameters of printouts as high as it is possible, we recommend adding 10% of fresh powder each time.

² Available as part of the appropriate profile purchased.

³ Depending on printing settings.

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Flexa Soft

Elastic and soft

Soft | Elastic prints



General information

Method

Material type	TPU
Granulation	50 - 80 [µm]
Color	Light Grey
Material refreshing ratio ¹	0 [%]
Compatible with ²	Lisa ⁴ & Lisa Pro

Parameters

Tensile Strength	1.8 [MPa]	PN-EN ISO 37:2007
Elongation at Break	137 [%]	PN-EN ISO 37:2007
Shore hardness in type A scale	45 / 58 ³	PN-EN ISO 868:2005

Thermal properties

Softening point (Vicat method type A50)	60.0 [°C]	PN-EN ISO 306:2014-02
Melting point	150 [°C]	Internal procedure
Printout density	0.77 [g/cm ³]	PN-EN ISO 845:2010
Printout water absorption	12.2 [%]	PN-EN ISO 62:2008

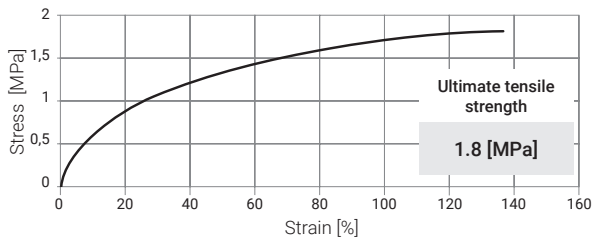
Applications

Haptic-touch parts, vibration dampers, soft elements, fashion design.

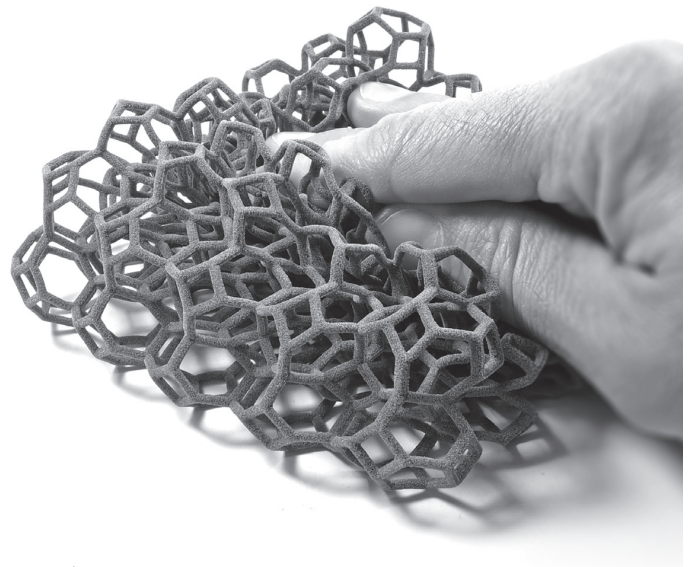
Functions

Low Shore hardness, elasticity, soft to touch.

Tensile testing



While the tensile stress does not exceed 0.8 [MPa], after load release, the test specimens retain their shape, with no external damage observed (e.g. fractures). The test specimens fracture when a max tensile stress of 1.8 [MPa] is applied.



¹ Material refreshing ratio - percent of Fresh powder which has to be mixed with Used (unsintered) powder - to be reused during next print. FLEXA has 100 [%] of usability. Although to keep the parameters of printouts as high as it is possible, we recommend adding 10% of fresh powder each time.
² Available as part of the appropriate profile purchased.
³ Depending on printing settings.
⁴ Compatible only with Lisa 1.5 or higher versions.

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Flexa Bright

Flexible and dyeable

Flexible | Dyeable | Brightly colored



General information

General information		Method
Material type	TPU	
Granulation	26 - 117 [µm]	
Color	Oyster White	
Material refreshing ratio ¹	0 [%]	
Compatible with ²	Lisa & Lisa Pro	

Parameters

Tensile Strength	10.0 [MPa]	PN-EN ISO 37:2007
Elongation at Break	318 [%]	PN-EN ISO 37:2007
Shore hardness in type A scale	79	PN-EN ISO 868:2005

Thermal properties

Softening point (Vicat method type A50)	75.1 [°C]	PN-EN ISO 306:2014-02
Melting point	160 [°C]	Internal procedure
Printout density	0.95 [g/cm ³]	PN-EN ISO 845:2010
Printout water absorption	3.0 [%]	PN-EN ISO 62:2008

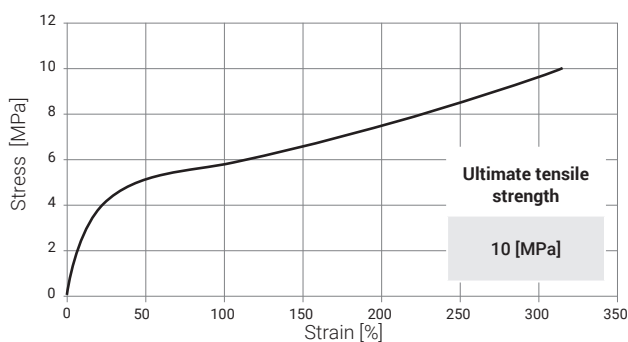
Applications

Visual aids for medical industry, elastic printouts with higher mechanical resistance, high-elongation parts, prototyping clothing parts, cosmetic prototypes.

Functions

High mechanical TPU, ability to dye, high-elongation, bright color.

Tensile testing



While the tensile stress does not exceed 4.0 [MPa], after load release, the test specimens retain their shape, with no external damage observed (e.g. fractures). The test specimens fracture when a max tensile stress of 10 [MPa] is applied.



¹ Material refreshing ratio - percent of Fresh powder which has to be mixed with Used (unsintered) powder - to be reused during next print.

FLEXA has 100 [%] of usability. Although to keep the parameters of printouts as high as it is possible, we recommend adding 10% of fresh powder each time.

² Available as part of the appropriate profile purchased.

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TPE

Dense, elastic and strong

Elastic | Durable | Dense | After sealer covering - watertight & airtight



General information

General information		Method
Material type	TPE	
Granulation	50 - 80 [μm]	
Color	Grey	
Material refreshing ratio ¹	10 [%]	
Compatible with ²	Lisa & Lisa Pro	

Parameters

Tensile Strength	6.0 [MPa]	PN-EN ISO 37:2007
Elongation at Break	196 [%]	PN-EN ISO 37:2007
Shore hardness in type A scale	90	PN-EN ISO 868:2005

Thermal properties

Melting point	190 [$^{\circ}\text{C}$]	Internal procedure
Printout density	0.70 [g/cm^3]	PN-EN ISO 845:2010

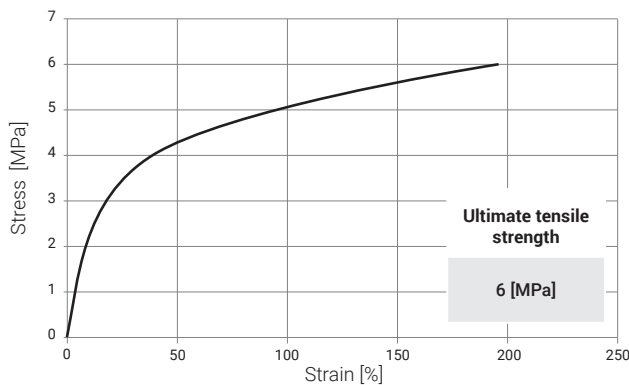
Applications

Hoses, gaskets, skin-touch applications, water/air tight elements, rubber-like functional prototypes.

Functions

Durable, water/airtight after sealing with Sinterit Sealer.

Tensile testing



While the tensile stress does not exceed 3.0 [MPa], after load release, the test specimens retain their shape, with no external damage observed (e.g. fractures). The test specimens fracture when a max tensile stress of 6 [MPa] is applied.



¹ Material refreshing ratio - percent of Fresh powder which has to be mixed with Used (unsintered) powder - to be reused during next print.

FLEXA has 100 [%] of usability. Although to keep the parameters of printouts as high as it is possible, we recommend adding 10% of fresh powder each time.

² Available as part of the appropriate profile purchased.

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SEALER



General information

Category	SEALER dedicated for printouts from TPE
Material	Liquid dipping mix
Type	Dispersed rubber
Colour	Black

Parameters

Density	0.98 [g/cm ³]
pH	9 - 11 (base)
Solubility in water	Slightly soluble

Thermal Properties

Boiling point	100 [°C]
Freezing point	0 [°C]
Vapor pressure (in 25 [°C])	24 [mmHg]

Packaging

Type	Plastic container
Weight	1 [kg]
Dimensions	100 x 100 x 200 [mm]

Storage Conditions

Relative air moisture	20 – 70 [%]
Storage temperatures	5 [°C] - 35 [°C]

Applications

Mechanical seals, isolating elements, gaskets.

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