ADVANC3D

ADSINT® PA11

A superior alternative to PA12




The market for plastic laser sintering is dominated by PA12, which is mainly offered by machine manufacturers. Alternative material often does not get the needed attention in spite of its superior features and wider range of applications. In order to gain competitive advantages, it is crucial for printing service companies to offer material which best suits the desired applications.

ADSINT® PA11 – 100% renewable organic carbon

Properties:

- a bio-based SLS-powder made of castor oil
- high elongation at break, elasticity and high impact resistance
- weather resistant (UV)
- excellent surface quality (very smooth)
- certified for medical and food applications (Natural)
- refresh rate between 35 % and 50 %

Applications:

- Automotive
- Aerospace/aeronautics
- Medical (dental and foot orthoses, surgical guides)
- Functional prototypes
- Ideal for environments with high mechanical stress and special surroundings (e.g. detergents, oil)

Other Product versions:

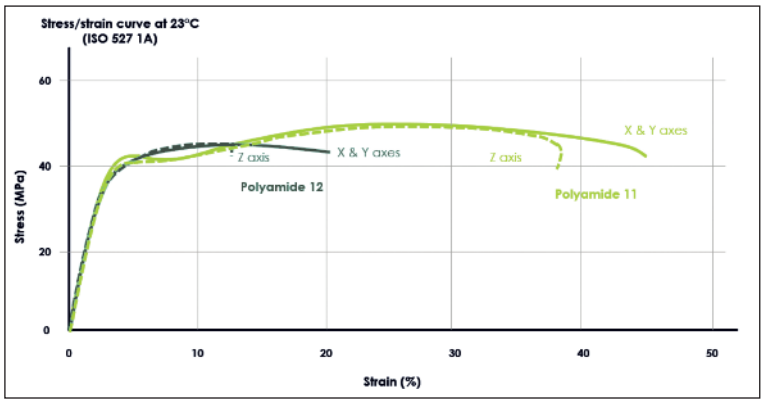
- AdSint PA 11 deep black (coloured in the mass)
- Reinforced with carbon fibre: AdSint PA11 ESD (dissipative) and AdSint PA11 CF (conductive)
- Flame retardant UL94 / V-0 at wall thickness of 3,2 mm: AdSint PA11 FR
- Other variations possible according to customer needs (aluminum, filled with glass beads etc.)

very smooth surface

no minimum order volume

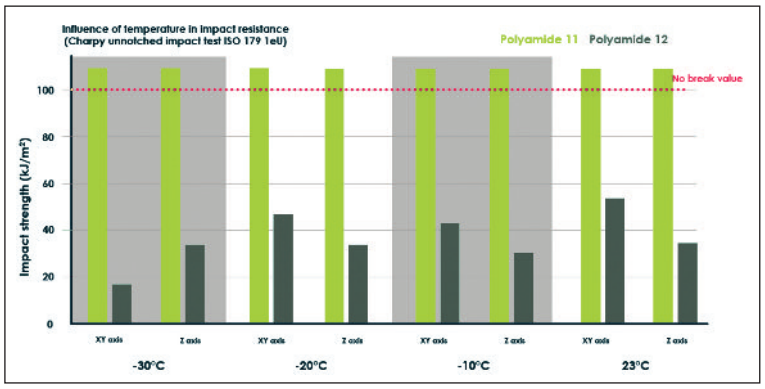
short delivery times

cost free support for a successfull print



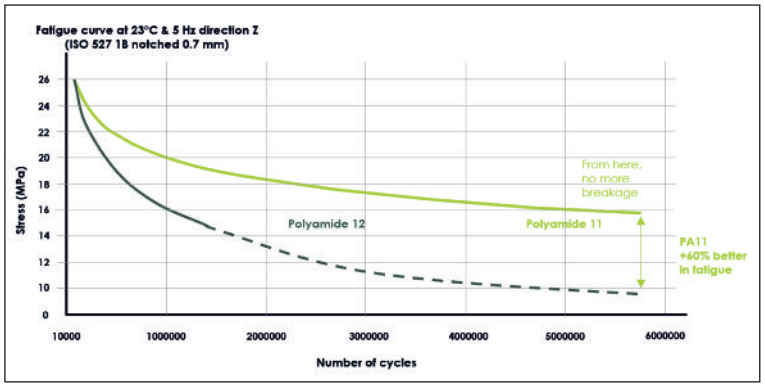
Elongation at Break

Thanks to its more ductile crystalline structure, PA11 exhibits superior tensile properties such as elongation at break, especially in the Z direction (usually the weakest direction of additive manufacturing technologies).



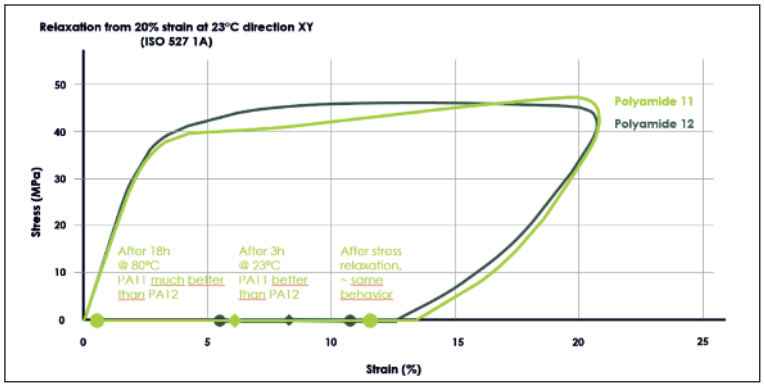
Impact Resistance

Low temperature has a very negative effect on the resistance to impact of PA6 or PA6.6 but also long chain polyamides like PA12, however this has no influence on the excellent resistance of PA11.



Fatigue Testing

Regarding fatigue, the superiority of PA11 is particularly evident in the Z direction, with a more than 60 % performance at high number of cycles versus PA12.



Elastic Memory

One of the key characteristics of PA11 is the excellent elastic memory due to the higher ductility before irreversible plastic deformation: the figure to the left shows that when submitted to a 20 % distortion, the part made from PA11 can fully recover its initial dimension, whereas the part in PA12 keeps a minimum 5.6 % distortion.

Graphics by ARKEMA

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