

Solution DataSheet

New generation of nylon powder for Selective Laser Sintering: case study of an air distributor prototype



Markets: Selective Laser Sintering Prototyping
(Automotive)
Polymers: PA 12, PA 6

Key performances:

Prototype close to injected part

- surface smoothness
- vibration and acoustic mimics
- temperature variations resistance

The ability of a selective laser sintering (SLS) prototype part to behave like the injected part is directly influenced by the nylon powder quality.

The latest generation of nylon powder Innov´ PA allows prototypes to be as close as possible to the injected parts, whatever the laser sintering machine is.

How Innov´ Pa reaches plastic-like performances of an air distributor, usually made of Glass-spheres reinforced PA 6?

- ▶ By achieving a higher surface resolution (with both reinforced or unfilled grades)
- ▶ By showing a plastic-like behaviour
- ▶ By having the support of an experienced technical expert



Achieving a higher surface resolution (with both reinforced or unfilled grades)

Innov´ PA powder has been specifically formulated to provide a higher «aesthetics resolution» in terms of:

- ▶ Smooth surface aspect allowing an excellent airflow test accuracy
- ▶ Look and feel much closer to a wide range of serial production parts The smoothest surface is observed whatever the type of machines used: EOS and 3D System.

Figure 1 illustrates this by a comparison of the rugosity of different prototypes made of competitive nylon powders with these 2 types of machines.

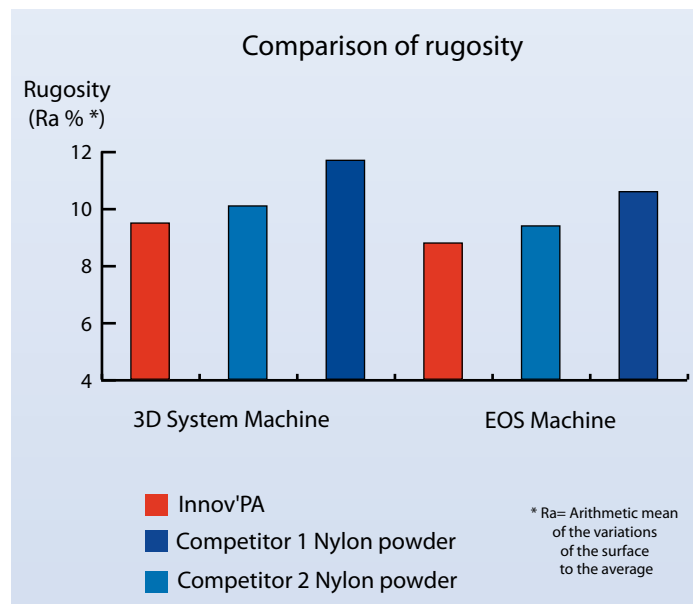


Figure 1: Comparison of rugosity of 3 SLS prototypes made of Innov'PA and two competitors nylon powders. (Rugosity measured by optic stratography.)

Showing a plastic-like behaviour

Innov'PA brings the right mechanical and physical properties to the air distributor prototype, outperforming by far what the previously used nylon powder achieved. The most critical ones are:

- ▶ Vibrations and acoustic behaviour closer to the PA 6 injected part (reinforced by Glass Spheres) for leakage testing on air-ducting
- ▶ Heating and defrosting performances to run cycled tests over a wide range of temperatures (cooling rate measurements, windscreen/window demisting and de-icing...)

Take benefit from the high level of technical support provided with Innov'PA and improve your prototype part performances.

Benefiting from constant technical support

The wide range of Innov'PA grades is provided with a constant support on both types of laser sintering systems provided by the 2 worldwide leaders of the LS market.

This support allows to accelerate:

- ▶ Your time of part development (part design support)
- ▶ Your time before production launch (machine settings support)