CATALOGUE OF SERVICES 3D PRINTING









3D PRINTING

3D printing is an innovative and revolutionary technology that has changed the way we create objects. This method makes it possible to create three-dimensional objects, opening the door to **endless creativity and production.**

3D printing can be found in a variety of industries including mechanical engineering, aerospace industry, medicine, architecture, design, education and many others. Its flexibility and adaptability make it an important a tool for many applications. This technology not only increases the speed and efficiency of production, but also allows you to experiment with new ideas and create complex and unique shapes that would be difficult to achieve by other means.

The potential of **3D printing** may change the way we create and design objects and will play a key role in the future with **innovative manufacturing and design**.





If you think of **3D printing**, what probably comes to mind is an FDM printer printing layer upon layer of plastic, but this isn't the only way to make a **3D print**. Another very common method of additive manufacturing is the powder **3D printing**. Unlike with the FDM printing, which prints filament, the powder **3D printing** uses powder as the primary printing material. The Powder printer uses a bonding agent application by a print head that applies a liquid binder (agent) to the powder print bed. The liquid binds the powder particles together, forming each layer of the requested object. Then a fresh layer of powder is added and the process is repeated layer by layer.

The material we use for this print is plastic powder/granulate **PA12 W** with which we are the **only manufacturer in Slovakia** who is able to print products in **white colour** and then we can colour them in **different colours according to your requirements** using colouring equipment, or we can modify the surface of the products using Powerfuse technology, which makes the surface of the material **soft and smooth**.

The new HP 3D High Reusability PA 12W material allows printing in white colour.



EXAMPLES OF 3D PRINTING **APPLICATIONS**



Prototypes





Fixtures

and holders

Visualizations





Design and

promotional

items

Packaging applications and cases



Health care and medical devices



ADVANTAGES OF 3D PRINTING

- High mechanical strength of the products
- Diversity of colours for your product
- Short delivery time starting from the order placement
- Simple production of complex and difficult to make models
- High print volume
- High surface quality without any sign of layering
- Elimination of different manufacturing technologies such as CNC machining and injection moulding
- Reduce part weight by up to 93% with topology optimization, while maintaining the functionality and strength of the part for the given application

WHY JUST 3D PRINTING?

This method of product manufacturing is **suitable for the** creation of various prototypes, complex components that would be difficult to create using other manufacturing technologies and it could be a tedious process. It is also useful, for example, in the area of medical devices for production of various splinters or as moulds for the creation of dental implants, it may find application in the automotive industry, mechanical engineering, etc.

We can print any 3D model based on your requirements, or design and engineer it and subsequently print it using the HP Jet Fusion 3D printer 5420W.





3D PRINTING OF WHITE PARTS ADVANTAGES OF THE 3D PRINTER HP MULTI JET FUSION 5420W

- White printouts with **unique white colour consistency**
- **Better properties** for subsequent processing and colouring of final parts
- Fast production of plastic parts with repeatable precision



technological limitations.

Very powerful feature of the HP 5420W is the consistency of 3D printing, both in dimensions of the prints and particularly in the colour consistency from the first to the to the last part. Thanks to the stable **colour output**, the subsequent post processing can also be efficiently managed, together with the process of dyeing and ensuring the production stability.





What are advantages of white colour? A typical example is the area of medical devices. In addition to pure white prints, **3D** white printing is indispensable option, when a part needs to be coloured. In this case, a white surface is indispensable and parts made by the **HP 5420W** can be painted in any shade to achieve a great design without

DYEING OF PRODUCTS

COLOUR YOUR 3D PRINTED PARTS WITH US.

Revolution in treatment of surface for 3D printed products. With a rapid development of **3D printing**, new options in manufacturing and design are opening up. People throughout the world are using this technology to create **complex and interesting 3D products.** However, even though **3D printing** itself brings a **revolution** in industrial design, the surface finishing of printed parts is often a problematic aspect of the process. This is where the **Dyemansion** machines enter the scene. They allow the dyeing of printed parts with perfect surfaces and high wear resistance. The **Powerfuse S** uses **different types of colours and materials**, allowing a wide range of colour finishing and personalisation options for **3D printed parts** and even models for **architectural and design purposes**.





Product dyeing is a process in which we can apply **any colour** according to the available colour swatch to a given product using the **DM 60** machine, which mixes water and paint at a temperature of 115°C for 150 minutes while the product is in the working area of the machine, where the colour palette is applied to the product.

The capacity of the dyeing machine is 80 I per cycle, where we can load the products of size 390 x 360 mm.





Discover the largest colour database for 3D printed parts on the market. With out technology DeepDye Colouring you can dye your 3D-printed polymer parts in almost any colour and turn them into high-value products. In order to provide you with the **best possible selection of colours** for your application, whether they are made of white or grey base material, we offer a variety of colour options to choose from: Wide variety of standard colours, RAL, Pantone and any colour of your choice.

DYEMANSION DM60



ADVANTAGES OF THE DM60

- **Controlled** dyeing **process** for 3D printed parts
- Accuracy of the final shade, repeatability of the process
- Variety of offered colours, it is also available to make the colour according to your requirements
- and light
- Fast dyeing process with a safe technology





• Certified dyeing process in terms of biocompatibility and resistance against heat

SURFACE TREATMENT

Whether you need improved aesthetics or functionality for your parts, we can help. For a perfect surface finish. Try our finishing capabilities and find the **right finish** for your application.

Surface treatments of parts created by 3D printing using high-end equipment will improve the functional properties of the final products. Post-process surface treatments thus expand the utilization of products manufactured with industrial 3D printers. Thanks to the mechanical (sandblasting) or **chemical** (vaporisation) treatment of the parts during a precisely controlled cycle, the surface properties of each part will change. A wide range of applications in industry offer the combination of surface treatment and subsequent dyeing of parts.

Our solutions guarantee full control over the parameters of the surface treatment process. With utilization of high-end solutions for individual post-processing stages (cleaning, finishing and dyeing) you can ensure that characteristics of your parts that are required by you or by your customers. Thanks to the repeatability of the process, the properties of the final parts will be the same in every production batch!





The **Powerfuse** is a method of polishing the surface of products that uses steam to polish the surface of the material, this surface polishing method is capable to reduce the roughness of the material by up to 70% and may process materials such as PA11, PA12, TPU and other most common materials.

With this method we are able to polish your product within 180 minutes.

The only green technology smoothing with steam.



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BEFORE

AFTER

- Chemical surface treatment process
- The parts are treated with an aerosol that evaporates and no waste is generated
- Meets standards for contact of parts with food
- Produces a smooth surface of parts at the level of injected moulds
- Sustained quality of outputs
- Fast surface treatment process



DYEMANSION POWERFUSE S



NOTES

















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