



DYEMANSION ON-DEMAND SERVICE GUIDELINES



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For more information:
<https://dyemansion.com/en/on-demand/#on-demand>

DYEMANSION ON-DEMAND SERVICE OVERVIEW

FAST FINISHING SERVICE FOR SMALLER ORDERS

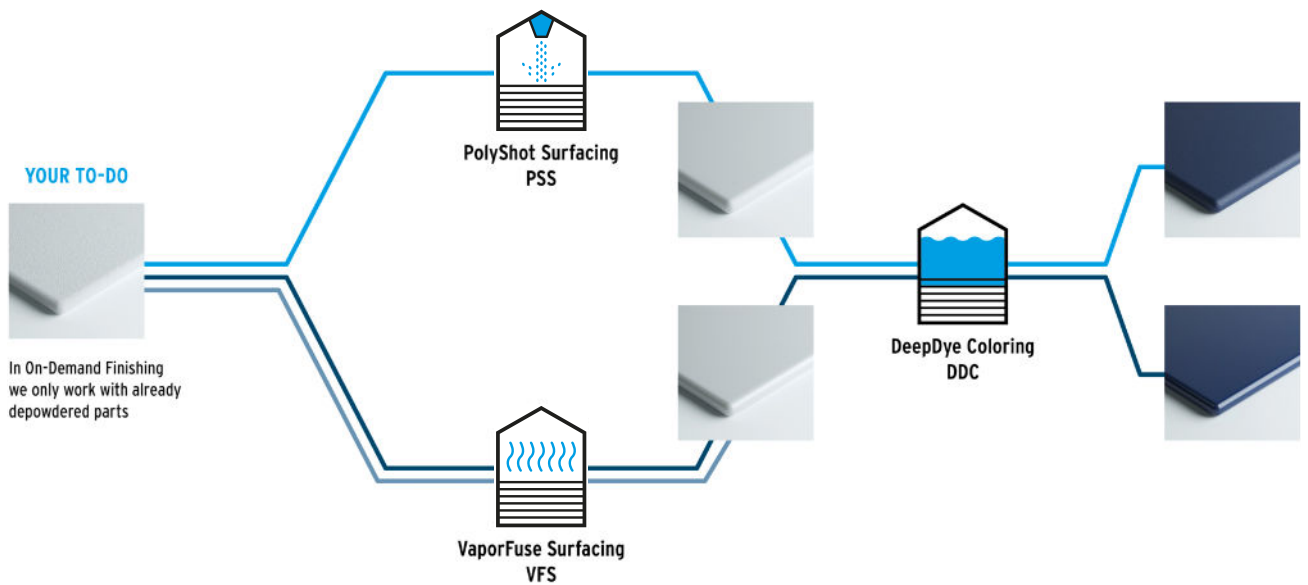
For this service, we only accept parts that [have already been depowdered](#).
For larger orders, please contact us or our [production partners](#) directly.

FINISHING SERVICES OFFERED:

① CLEANING

② SURFACING

③ COLORING



What's your desired finish?

PolyShot & DeepDye

Semi-gloss, scratch resistant, soft haptics aesthetic finish for hard plastics such as PA11 or PA12 and applications like eyewear or prosthetics.

VaporFuse only

or VaporFuse & DeepDye

Sealed, washable, injection-molding like functional finish for both flexible and hard plastics such as PA11, PA12 or TPU and applications like pipes or midsoles.

COMPATIBLE TECHNOLOGIES

AVAILABLE FOR ON-DEMAND SERVICE

POWDER BED



MJF
HSS



SLS

With the most common powder materials of the categories: PA12, PA11 & TPU.

You can find all available materials in our [order form](#).

ON REQUEST

Other materials can be requested as a free TryMansion benchmark.

POWDER BED



MJF
SAF
HSS



SLS

EXTRUSION



FDM
FFF

VAT PHOTOPOLYMERIZATION



SLA

COLOR CHOICE

In addition to our [standardized color data base](#) individual colors of choice (e.g. corporate colors) can be developed. A complete list of all standard and RAL colors can be found on [our website](#).

STANDARDIZED COLOR DATA BASE

BASE MATERIAL \ COLORS	STANDARD COLORS	COLOR SYSTEMS	AUTOMOTIVE COLORS ^x	NEON COLORS ^x	COLOR MATCHING
WHITE BASE COLOR	✓	✓	✓	✓	✓
GREY BASE COLOR	✓	✓	✓		✓

Ready to use
 Further development offered

INDIVIDUAL COLORS OF CHOICE

ON REQUEST

Available for most common materials.

BASE MATERIAL	COLOR OF CHOICE ¹
	ALL COLORS except: Pure white, Metallic, Neon
	DARKER COLORS THAN BASE MATERIAL² except: Metallic, Neon

COLOR MATCHING OPTIONS

STANDARD	SPECIAL
Color development for DyeMansion processes	Color development for hybrid and third-party processes ³

³ e.g. PolyShot Surfacing in combination with tumbling

¹ DeepDye coloring is based on an additive color mixture: Therefore, color options are limited to colors that are equal to or darker than the raw part.

² Exception: Grey Base Color + VaporFuse Surfacing (VFS): VFS further darkens the color compared to the raw part. Only darker colors are possible.

REQUIREMENTS CLEANING

!

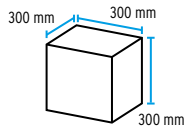
Our On-Demand Service includes surfacing and coloring. It does not include cleaning. All parts should therefore be shipped completely depowdered.

CLEANING WITH POWERSHOT C
See Design Guidelines: PolyShot Cleaning & PolyShot Surfacing

CLEANING WITH ANOTHER PROCESS
Ensure gentle and uniform depowdering. For manual blasting, we recommend a minimum distance of 30 cm from the nozzle to the part at a maximum beam pressure of 3 bar. Excessive radiation causes the surface of the part to "burn" and, in the case of glass blasting agents, glass breakage on the surface. Both can negatively affect subsequent surfacing and coloring.

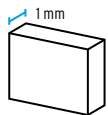


DESIGN GUIDELINES POLYSHOT CLEANING & POLYSHOT SURFACING



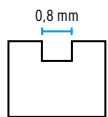
MAXIMUM SIZE

Maximum size: Approx. 300 mm x 300 mm x 300 mm (L x W x H) with automatic operation within the rotating basket
Larger parts possible when switching to manual operation.



MINIMUM WALL THICKNESS

Minimum wall thickness: 1.0 mm
For delicate features on voluminous parts, the required wall thickness may differ due to the mechanical strain in the rotating basket.



MINIMUM GAP SIZE

Minimum gap size: 0.8 mm
If the gap is not large enough, blasting material can get caught in the part. DyeMansion reserves the right, after consultation with the customer, to charge for the additional work or to ship the parts with residual blasting material.



DUCTS AND INDENTATIONS

Due to the process, the surface treatment of ducts and indentations is possible to a certain extent and must be assessed on an application-specific basis.



CORNERS

PolyShot Cleaning
Rounded inner edges prevent powder buildup during the cleaning process.

PolyShot Surfacing
Enables homogeneous smoothing in corners and prevents the buildup of blasting material.

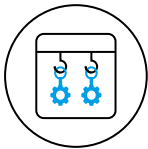
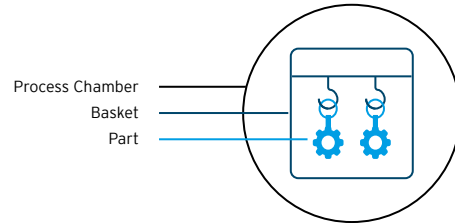


FASTENING GUIDELINES VAPORFUSE SURFACING



VaporFuse Surfacing is a finishing process based on the condensation of vaporized VaporFuse Eco Fluid on the surface of the part.

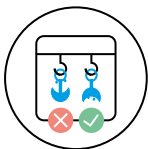
The hanging of the part in the basket carrier ensures that the steam can freely access the surface of the part. For this purpose, mounting options in the form of an eyelet on the part are necessary.



EYELETS FOR MOUNTING

Ideally, the eyelet is positioned so that the weight of the part is transferred evenly while hanging.

Depending on the weight and material, the eyelet must be sufficiently sized. In the case of flexible materials, we recommend stronger eyelets in order to be able to absorb the weight of the part. If you have any questions, please contact [your On-Demand Service contact](#).

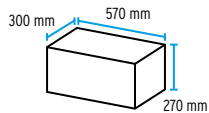


HANGING ALIGNMENT

Large upward facing sinks should be avoided, as condensed Eco Fluid can accumulate and not drain properly.

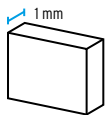


DESIGN GUIDELINES VAPORFUSE SURFACING



MAXIMUM SIZE

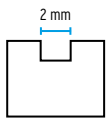
570 mm x 300 mm x 270 mm (L x W x H)



MINIMUM WALL THICKNESS AND TRANSITIONS

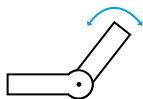
Possible warping by VaporFuse Surfacing can be prevented if large changes in thickness are avoided and a minimum wall thickness of 1 mm is taken into account.

These measures also reduce induced stress during the printing process. In general, thermal stresses during the printing process must be minimized as much as possible.



MINIMUM GAP SIZE

Narrow gaps may accumulate Eco Fluid. As a precaution a minimum gap size of 2 mm must be maintained.



MOVING PARTS

Moving parts merge close to the contact points. Ideally, the parts are separated and mounted separately. Depending on the application, spacers or fixings can also be provided in the design to avoid contact.



CHANNELS AND OPENINGS

Diameter and length ratios need to be considered on an application-specific basis. As a reference, a continuous channel with a diameter of 15 mm and a length of approx. 250 mm is processible.

Geometric features with openings on both ends are preferable to features with deep one-sided openings (i.e. blind holes).

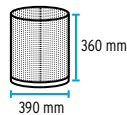


CORNERS

Rounded inner edges prevent the accumulation of Eco Fluid.

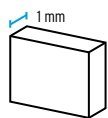


DESIGN GUIDELINES DEEPLYE COLORING



MAXIMUM SIZE

390 mm x 360 mm (Ø x H)



MINIMUM WALL THICKNESS

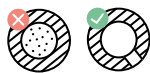
Depending on the translucency of the material, thin wall thicknesses can lead to color variations. A minimum wall thickness of 1 mm is recommended.



CHANNELS AND UNDERCUTS

Air bubbles can get stuck in channels and undercuts, which prevent the dye from coming in contact with the surface of the part.

An accumulation of air bubbles on the part can be prevented by adding holes, openings and rounding edges.



CAVITIES

Cavities with or without enclosed powder cause the part to float in the dye bath.

Ideally, cavities are avoided by additional openings.

If design adjustments are not possible, the parts can be fastened inside the dye bath to the basket. Please mark the corresponding parts.



SURFACE PROPERTIES

The color absorption and the dyeing result depend on surface properties. It is recommended to avoid different characteristics on critical surfaces.

The visibility of differences, for example due to upskin and downskin, can be reduced by optimized print orientation of the part.



ROUNDED EDGES

Before DeepDye Coloring

Rounded edges allow more consistent color absorption than sharp edges.

After DeepDye Coloring

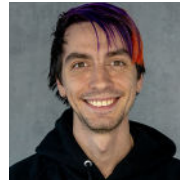
Rounded edges improve color retention on parts subject to mechanical abrasion.

ORDERING PROCESS

For offer preparation as well as any other queries, please get in touch with our contacts:



EMEA & APAC
 Katharina Spes
on-demand@dyemansion.com
 +49 89 4141705 13
 +49 151 - 55 794 644



AMERICAS
 Nelson Turek
on-demand-na@dyemansion.com
 +1 (512) 589-6521



DyeMansion On-Demand Service
 Robert-Koch-Straße 1
 82152 Planegg-Munich
 Germany



DyeMansion On-Demand Service
 4020 S. Industrial Drive, #160
 Austin, TX, 78744
 United States

PROCESS OVERVIEW

