Digital Manufacturing Trends Q2/2018

3D HUBS

Introduction

Q2 brings about a change to the quarterly report with a new name, Digital Manufacturing Trends. With 3D Hubs evolving into a manufacturing platform beyond just 3D printing, it's time we also reflected that in our quarterly report. 3D printing will maintain its prominence in the report, you'll just be getting broader insights into Digital Manufacturing with data on such technologies as CNC Machining and in the future Injection Molding.

3D Hubs Digital Manufacturing Trends is a quarterly update using data from 6,000 active international suppliers, who create more than 200,000 parts each quarter. It's the only industry report based on hard numbers and the most extensive overview of the latest trends in Digital Manufacturing.

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SLS Technology continues to score a perfect 5.00 every quarter since the start of 2017 with the Formiga P 100 taking #1 spot. The SLS machine creates parts with a minimum layer height of 60 microns and boasts a 200 mm x 250 mm x 330 mm build volume. Impressively HP's Jet Fusion 3D 4200 machine has jumped from #8 to #2 moving from a 4.75 rating to a 4.95, the MJF technology machine is useful for short-run manufacturing needs thanks to the speed of the process. Moving from #10 in Q1 to #3 is the Objet30 Prime, a PolyJet machine that allows you to combine materials with different properties to create the visual representation of the end product.

The technology spread of the Top 10 has remained the same since Q2 with 60% of the machines using SLS technology. SLA has doubled its presence with the Ipro 9000 a new entrant into the top 10.

#	Printer Model	Technology	Printer Quality Rating
1	Formiga P 100	SLS	5.00
2	HP Jet Fusion 3D 4200	MJF	4.95
3	Objet30 Prime	PolyJet	4.94
4	EOSINT P 760	SLS	4.93
5	iSLA-650 Pro	SLA	4.92
6	SPro 230	SLS	4.84
7	Formiga P 110	SLS	4.81
8	SPro 60	SLS	4.77
9	Ipro 9000	SLA	4.69
10	EOS P 396	SLS	4.65

These are the top 10 rated industrial printers out of 200 printer models listed on 3D Hubs, based on print quality ratings from customer review data. Only printers with more than 30 reviews in the quarter are included in these statistics.

Industrial

Most Used Industrial Printers

Insights

The Most Used Industrial Printers saw it's spread of prints decrease with the top 4 making nearly 10,000 prints compared to 2,562 by the rest of the Top 10. The HP Jet Fusion 3D 4200 takes #1 spot for the second quarter running, doubling its total output from 2,437 prints in Q1 to 5,087 in Q2. The Formiga P 110 maintained second place adding 50% to the total from 1,695 to 2,796. The SPro 230 in #3 maintained its performance with just over 1,000 prints made.

This dominance of sintering technology at the top four shows its dominance in the industry thanks to it offering very high design freedom, high accuracy and parts with good and consistent mechanical properties.

#	Printer Model	Technology	Prints
1	HP Jet Fusion 3D 4200	MJF	5,087
2	Formiga P 110	SLS	2,796
3	SPro 230	SLS	1,062
4	Formiga P 100	SLS	1,053
5	EOS P 396	PolyJet	577
6	SL 600	SLA/DLP	650
7	sPro 60	SLS	571
8	Objet30 Prime	Material Jetting	342
9	EOS P 395	SLS	221
10	UnionTech Lite 600	SLA/DLP	201

These are the top 10 most used indsutrial printers out of 200 printer models listed on 3D Hubs. The data is based on customer prints from the previous quarter.

Desktop

Highest Rated Desktop Printers

Insights

Another quarter another desktop printer tops the Print Quality Ratings with the Ultimaker 2+ moving from #2 to #1. Although the Ultimaker 2+ was launched back in 2016 its has become a respected workhorse in its field with a rating of 4.86.

Prusa Research sees three machines in the Top 10 with the MK2S taking #2, MK2 at #4 and the new MK3 continuing its respected pedigree at #7. What's even more impressive is that the MK2 sits at #4 with the most reviews of all the machines featured. Ultimaker has matched the feat with the 2+, 2 and 3 all making the Top 10, showing 2 manufacturers increasing their market share. That being said, the Form 2 remains the only SLA machine to be featured in the Top 10 since 2017.

#	Printer Model	Technology	Reviews	Print Quality Rating
1	Ultimaker 2+	FDM	226	4.86
2	Original Prusa i3 MK2S	FDM	413	4.84
3	Form 2	SLA	725	4.83
4	Original Prusa i3 MK2	FDM	931	4.83
5	Zortrax M200	FDM	293	4.81
6	Flashforge Creator Pro	FDM	414	4.81
7	Original Prusa i3 MK3	FDM	165	4.79
8	Ultimaker 3	FDM	182	4.77
9	Ultimaker 2	FDM	249	4.76
10	Creality CR-10	FDM	219	4.75

These are the top 10 rated printers out of 700 printer models listed on our platform, based on print quality ratings from customer review data. Only printers with more than 140 reviews in the quarter are included in these statistics.

Desktop

Most Used Desktop Printers

Insights

Total Prints created for Top 10 went from 57,516 to 67,516 with all machines seeing an increase. The Most Used Desktop Printer in Q2 was the Original Prusa i3 MK2, no surprise as the most reviewed machine, producing 15,087 parts. Following closely at #2 is the Form 2, thanks to its ability to create prints with a smooth surface finish and with high accuracy. The Flashforge Creator Pro maintained its position at third spot creating 33% more prints than in Q1.

A surprise entrant is the Fusion3 F400-S, an industrial desktop FDM machine that can print in all manner of thermo-plastics available on the market. It placed #9 with a respectable 3,444 prints made.

#	Printer Model	Technology	Prints
1	Original Prusa i3 MK2	FDM	15,087
2	Form 2	SLA	14,211
3	FlashForge Creator Pro	FDM	9,543
4	Original Prusa i3 MK2S	FDM	6,704
5	Creality CR-10	FDM	4,510
6	Ultimaker 2	FDM	3,600
7	Ultimaker 3	FDM	3,521
8	Zortrax M200	FDM	3,487
9	Fusion3 F400-S	FDM	3,444
10	Monoprice MP Select Mini	FDM	3,409

These are the top 10 most used desktop printers out of 700 printer models listed on 3D Hubs. The data is based on customer prints from the previous quarter.

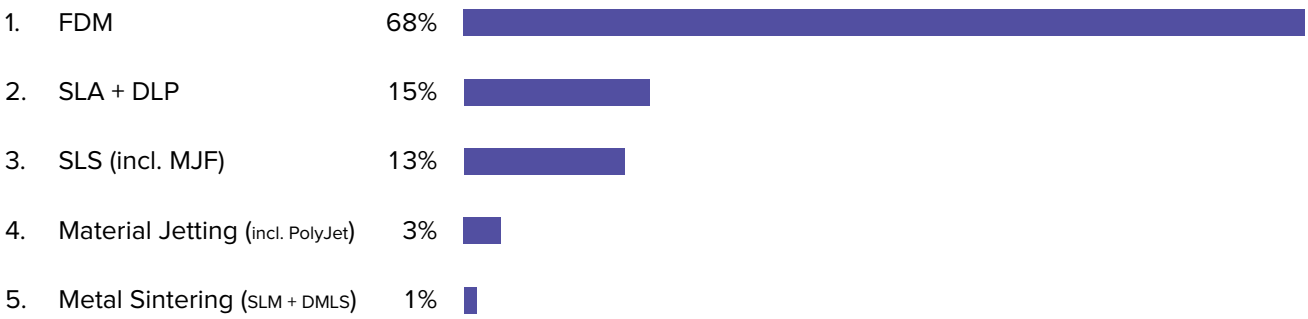
Tech & Materials

Most Used Technologies

Insights

The most popular technology continues to be FDM with 68% market share, it's still the most affordable way to get the first prototype in your hands. FDM saw a marginal increase of 2% whilst SLA + DLP maintained it 15% share at #2. At #3 SLS saw an increase in popularity with a small 1% bump to 13% continuing its chase of SLA + DLP a gap potentially closing even further as we see SLS dominate the most popular industrial technologies.

CFF has dropped out of The Most Used Technologies list with Material Jetting and Metal Sintering finishing #4 and #5 respectively. This sudden omission could be down to the improvement in strength of thermoplastics available on FDM machines, a close rival.



The data displayed shows the breakdown in revenue as a percentage for each technology.

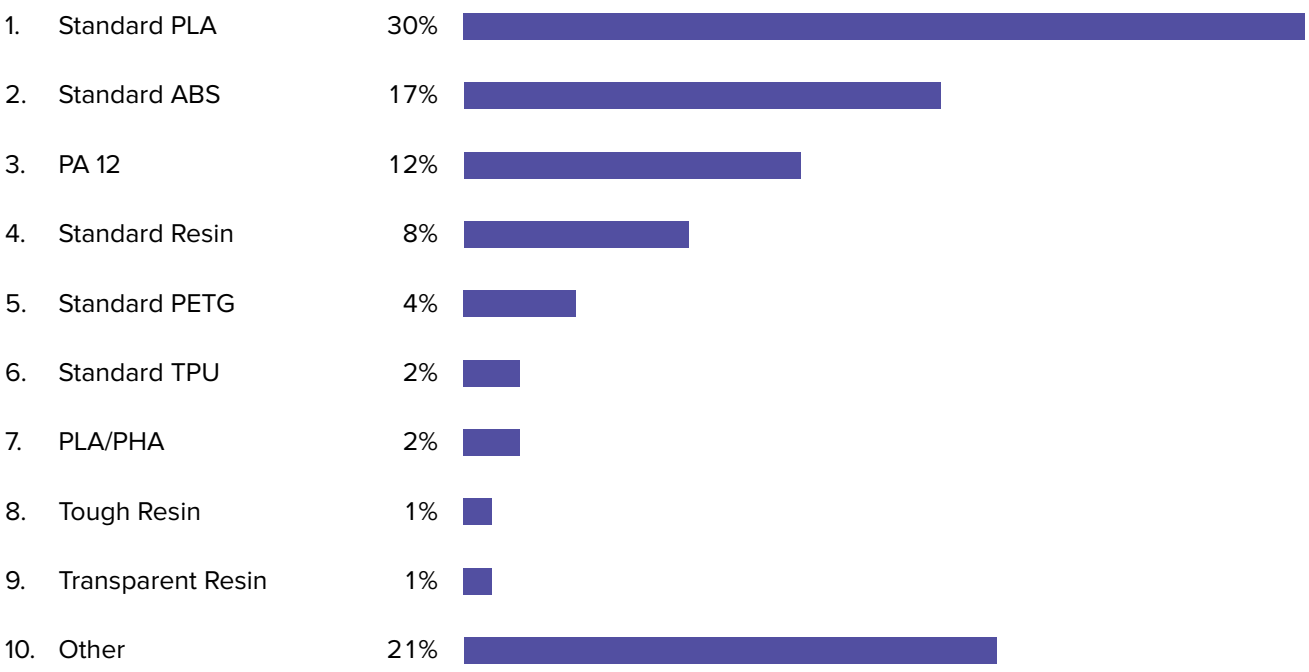
Tech & Materials

Most Used Materials

Insights

In Q2 the variety of materials has been simplified with the introduction of a “Standard”, meaning that suppliers list their materials with a generic term to encompass all variants. Branded PLA’s would sometimes appear independently this way you can get a truer portrayal of the most used materials.

Standard PLA comes in at #1 with a drop of 4% since Q1 with 30% of the material pie, Standard ABS at #2 increases to 17% still way off top spot. The race between SLA/DLP and SLS continues on a material level as PA 12 (the most popular SLS material) with 12% has overtaken Standard Resin (the most popular SLA/DLP material), with 8%. That being said Transparent and Tough Resin both SLA/DLP materials have entered the list for the first time at #8 and #9 respectively.



The data displayed shows the breakdown in revenue as a percentage for each material.

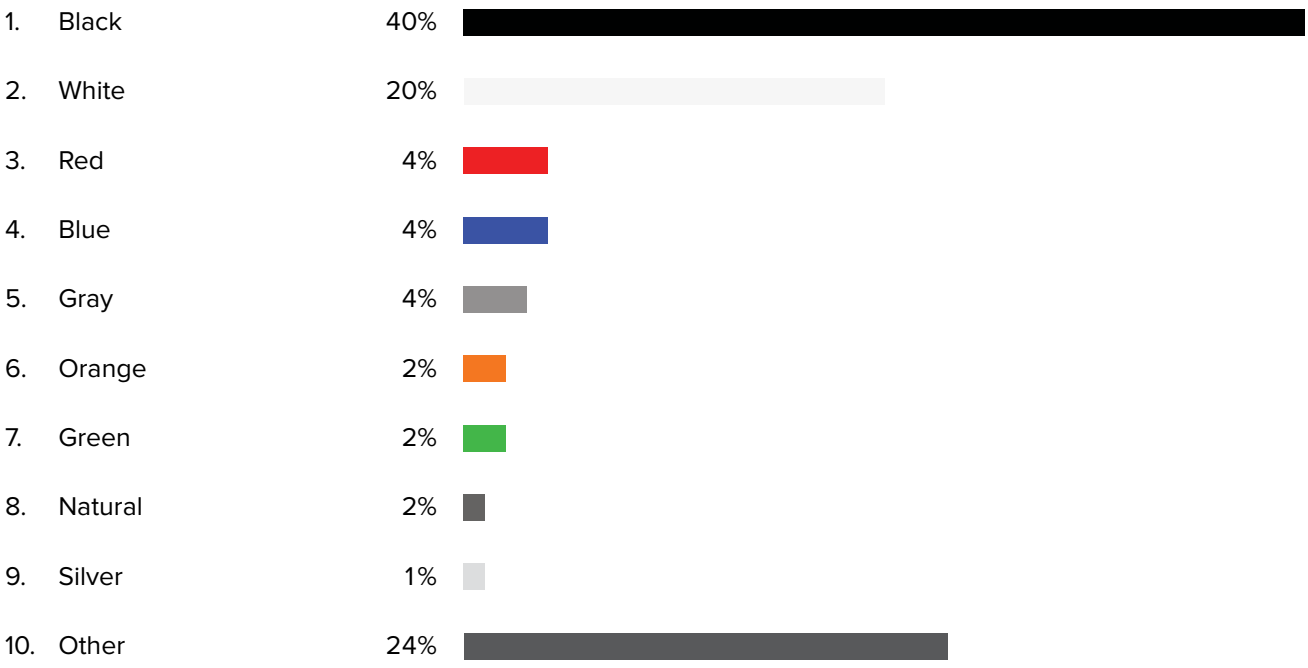
Tech & Materials

FDM Color Distribution

Insights

The FDM Color Distribution has seen a dramatic change as Black has become the most dominant color in the history of the report at #1 with 40%. Out of all the prints manufactured on 3D Hubs, 4 times out 10 the part will be black, nearly double the chance of #2 white with 20%. The rest of the list remains largely unchanged with the exception of Natural a new entrant to the largely stable Top 10.

Materials on 3D Hubs have now been standardized, meaning suppliers mark the color of their material from a pre-populated list of standard colors. Previously there was a large array of colors varying from language-specific such as Noir to descriptive name differences like Midnight Black. With standardization, it means customers can now have fewer variables to be concerned about when selecting a color which may or may not be in line with their expectations.



The data displayed shows the most popular colors this quarter, analysing the colors of submitted prints.

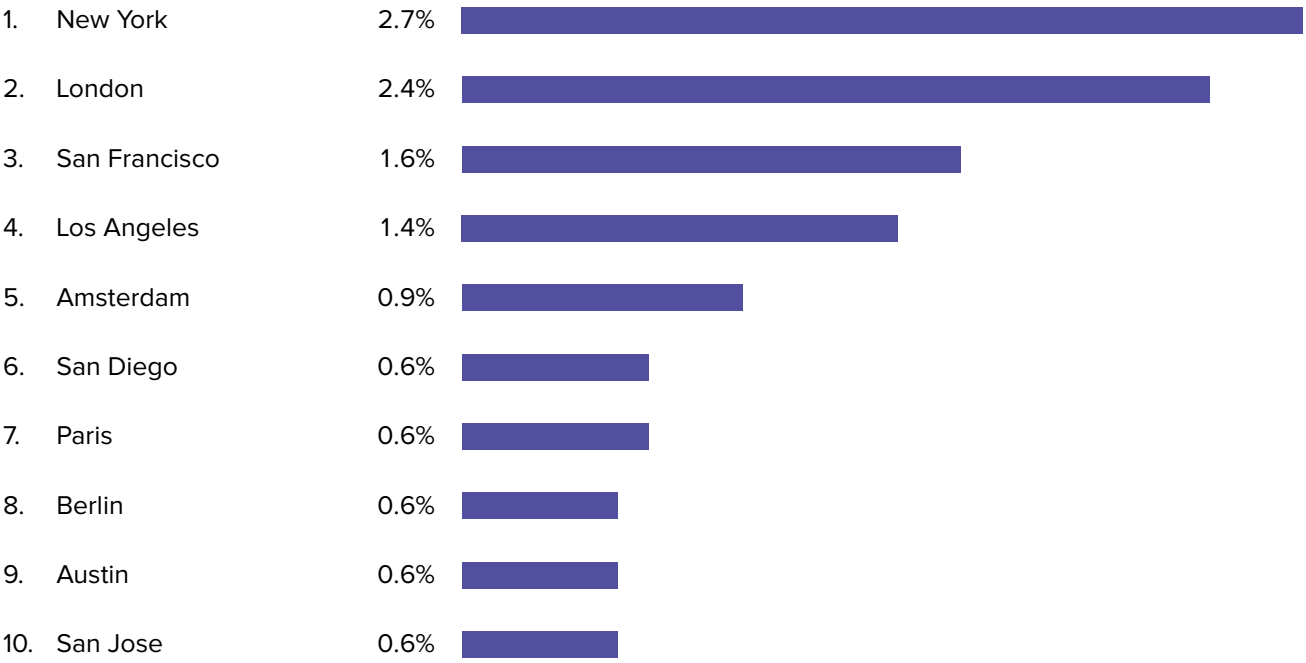
Geography

Top Print Cities

Insights

New York keeps top spot going into Q2 in 2018 maintaining a 2.7% share of all prints ordered on 3D Hubs. London finished second which doesn't tell the entire story as it added 0.5% to its market share, a significant rise and right on the heels of New York.

The West Coast of the USA is still represented well with San Francisco at #3 overtaking Amsterdam, Los Angeles #4, San Diego #6 and San Jose #10. European cities make up the remainder with the exception of Austin, Texas. Notably, Toronto has dropped out and Berlin, Paris have made their way back into the list in #7 and #8.



The data displayed shows the number of prints ordered last quarter per city as a percentage of the total. Other has been omitted to emphasise the difference in the top ten cities.

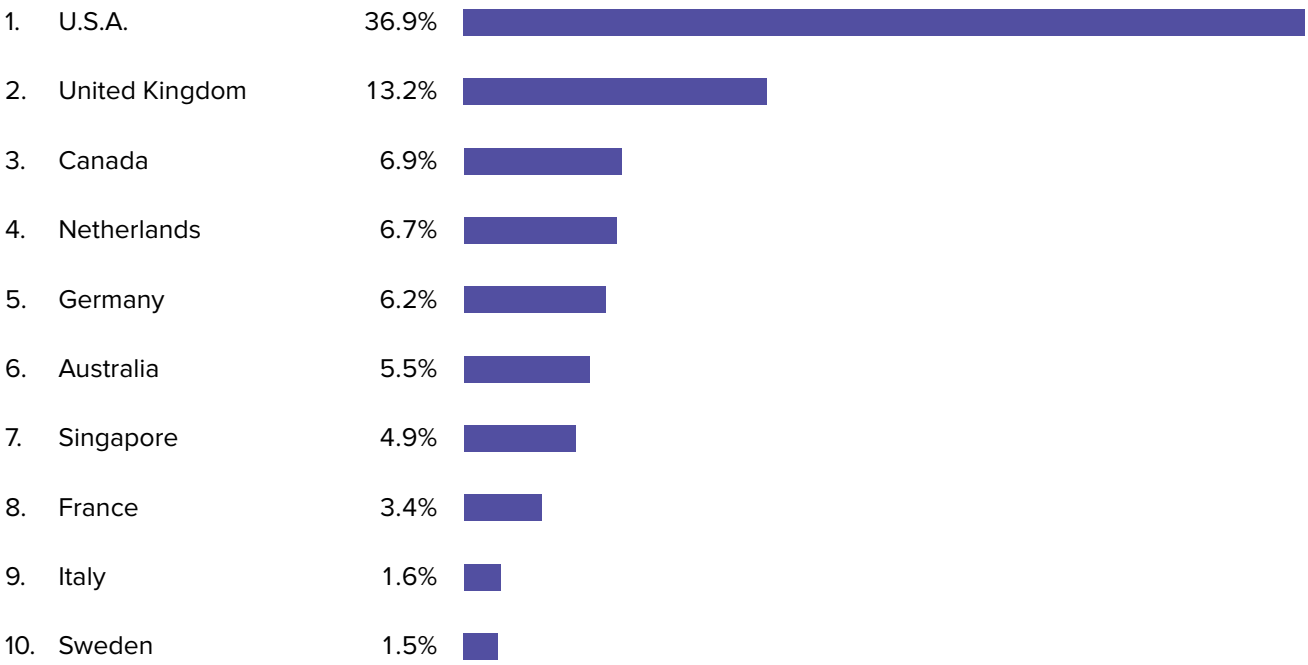
Geography

Top Print Countries

Insights

The Top Print Countries is familiar site with the Top 3 maintaining their respected positions. The USA though has lost nearly 3% of its total share with 2% going to the UK moving from 11.1% to 13.2% making the gap a tiny bit smaller.

The Netherlands climbs to #4 beating out Australia who drop down to #6 since their record high of #4 in Q1. Europe has seen a rise overall with Sweden making an appearance at #10 and Germany moving up closely behind The Netherlands in at #5. Singapore at #7 is still the strongest Asian country to be featured.



The data displayed shows the number of prints ordered last quarter per country as a percentage of the total. Other has been omitted to emphasise the difference in the top ten countries.

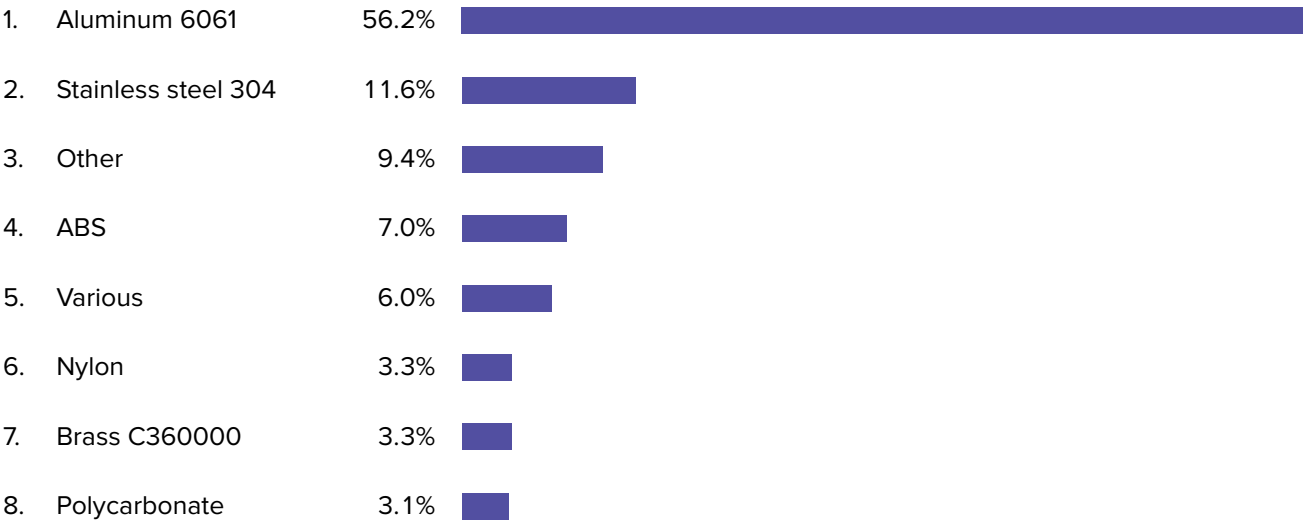
CNC

Most Used Materials

Insights

The Most Used Material by far continues to be Aluminum 6061 with 56.2% of all parts submitted being made in this materials. Stainless Steel 304 drops from 12.6% to 11.6% but keeps its place at #2, a more expensive material to machine but offering high strength with high temperature and chemical resistance.

Other places #3 with 9.4% denoting materials not specified in the available materials list. Other for Q3 will see a further breakdown as 3D Hubs is releasing 17 new materials including Delrin, Aluminum 7075 and PEEK, with instant quoting available here.



The data displayed shows the most popular materials this quarter, analysing the materials of submitted parts. Other denotes a material not specified in the materials listed and various indicated an order was made up of various parts containing a variety of materials.

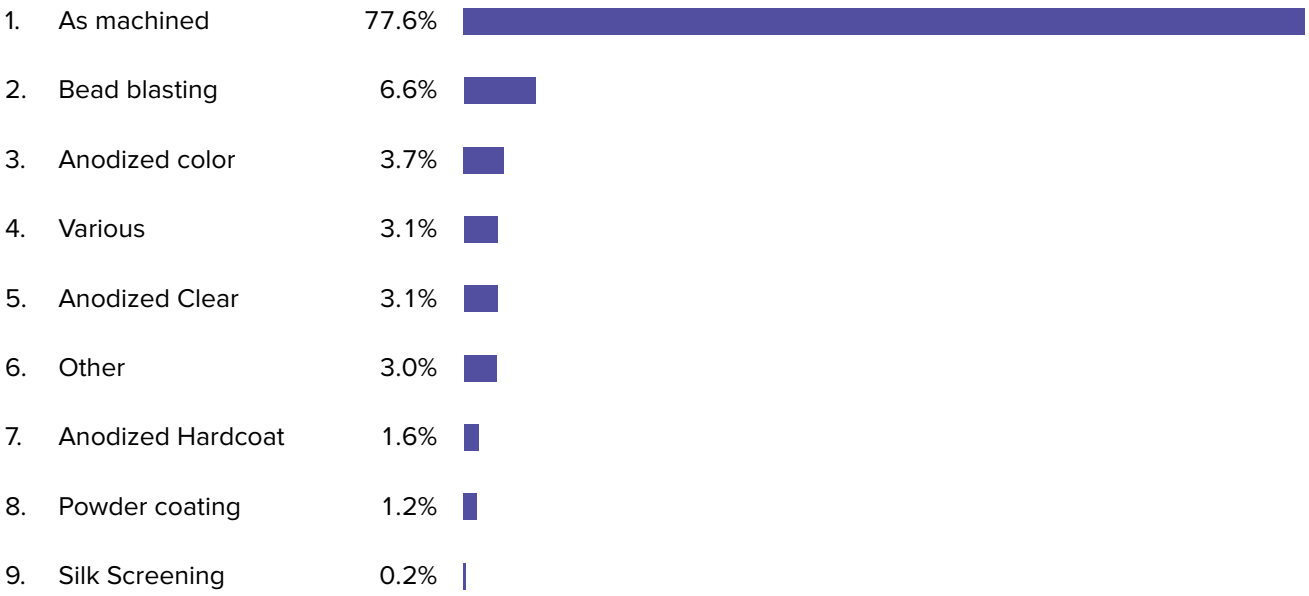
CNC

Most Used Finishes

Insights

The Most Used Finish with 77.6% is leaving the part as machined, the standard as machined surface roughness (Ra) is 3.2 µm. On specification surface finish requirements can be increased to 1.6, 0.8 and 0.4 µm. This finish comes at no added cost and the tightest dimensional tolerances making it a favorite for most projects.

Bead blasting holds its spot at #2 decreasing its popularity 0.9%, used mainly for visual purposes, bead blasting is a manual process and removes the tool marks on the part. Anodized color jumps from #6 to round out the top 3 with 3.1%, a decorative anodizing that gives parts a smooth, aesthetically pleasing surface with some corrosion resistance.



The data displayed shows the most popular finishes this quarter, analysing the finishes chosen for submitted parts. Other denotes a material not specified in the materials listed and various indicated an order was made up of various parts containing a variety of materials.

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