

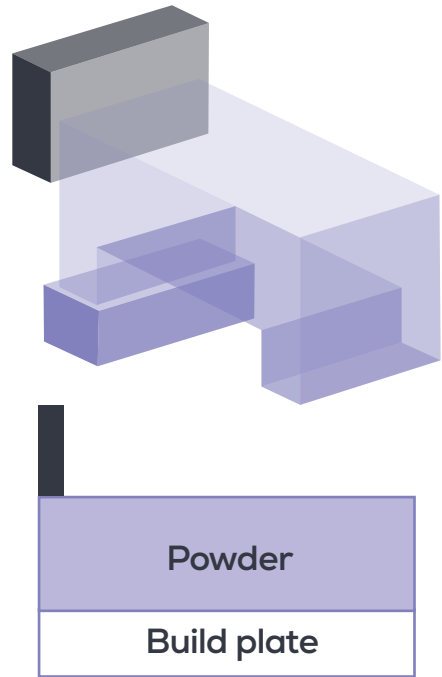
METAL 3D PRINTING

POWDER BED FUSION (PBF)

POWDER SPREADING TECHNOLOGY

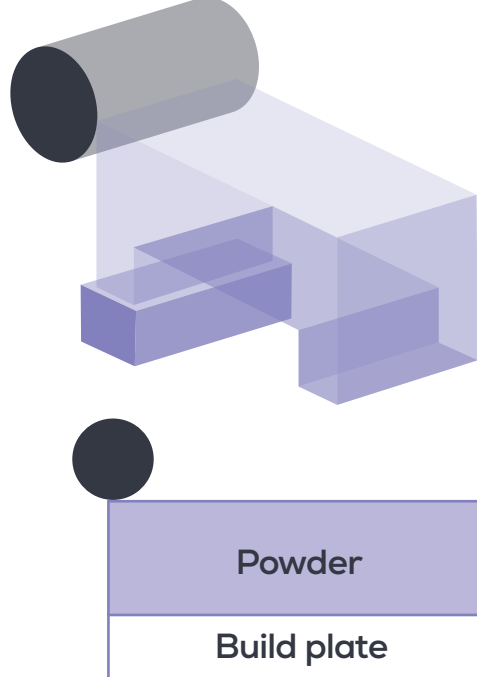
Re-coater Configurations: Blade vs. Roller

Blade



The **blade** is a scraper used to **drag** the powder across the build plate.

Roller

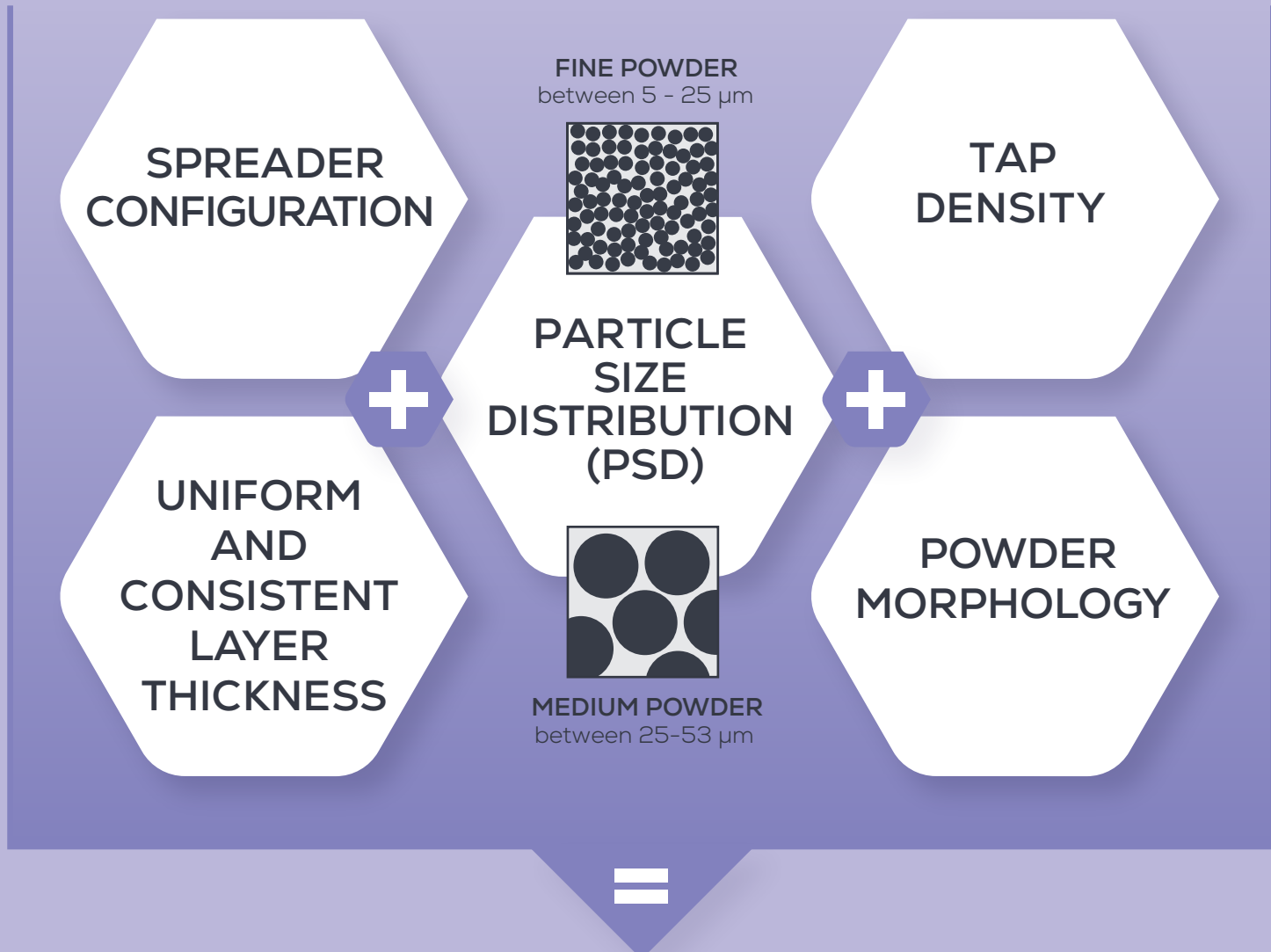


A **roller** uses a cylinder to **fluidize and compact** the powder as it's being spread across the build plate.

Layer Quality

In the PBF process, the quality of the powder layer is of utmost importance.

Many factors contribute to the quality of each layer of powder:



Powder Bed Density (PBD)

PBD is the actual density of the packed powder in your bed.

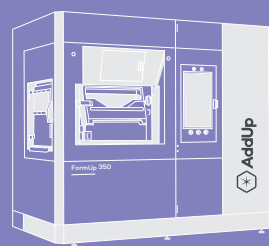
Blade

PBD is less than TAP Density: the mass/volume of powder after being tapped (or vibrated) under specific conditions.

Roller

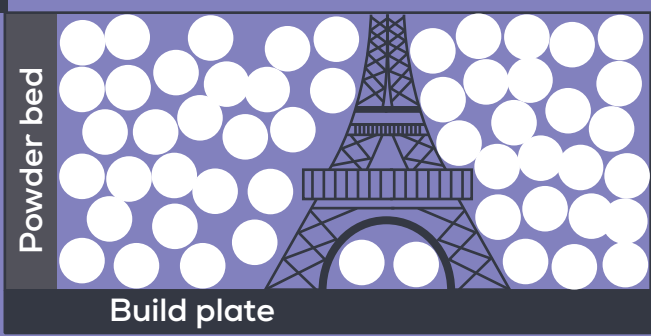
PBD is greater than TAP Density because the roller provides compression to pack the powder tighter.

The AddUp Advantage



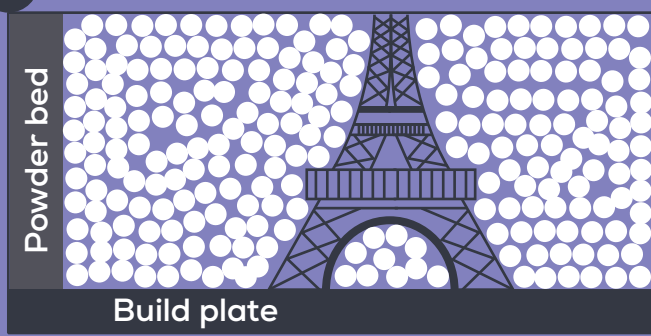
AddUp's FormUp 350 is the only PBF machine to use a roller recoater combined with a fine powder PSD to achieve optimal Packing Bed Density

Blade



Blade
Medium Powder
25-53 μm

Roller



Roller
Fine Powder
5-25 μm

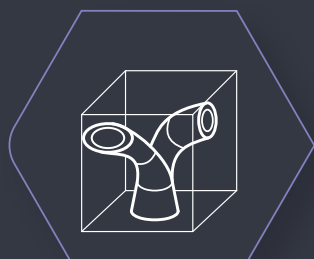
What Does This Mean For You?

LESS SUPPORTS

AddUp's roller achieves a higher PBD which increases the conductivity of the powder and reduces stresses and thermal deformations during the process.

OPTIMAL SURFACE FINISH

AddUp's fine powder achieves a higher PSD than coarser powders which results in a surface finish as low as 4 Ra μm.



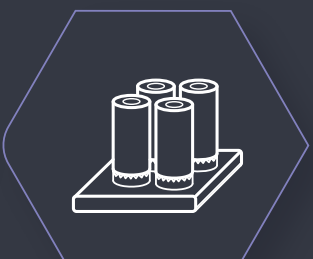
Design Freedom



Less Post Processing



Cost Savings



Increase Productivity