



ACAF 2024 FLORIDA ASPHALT EXPO AND CONFERENCE **TOGETHER WE SHINE**

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Why use a Milling Machine?

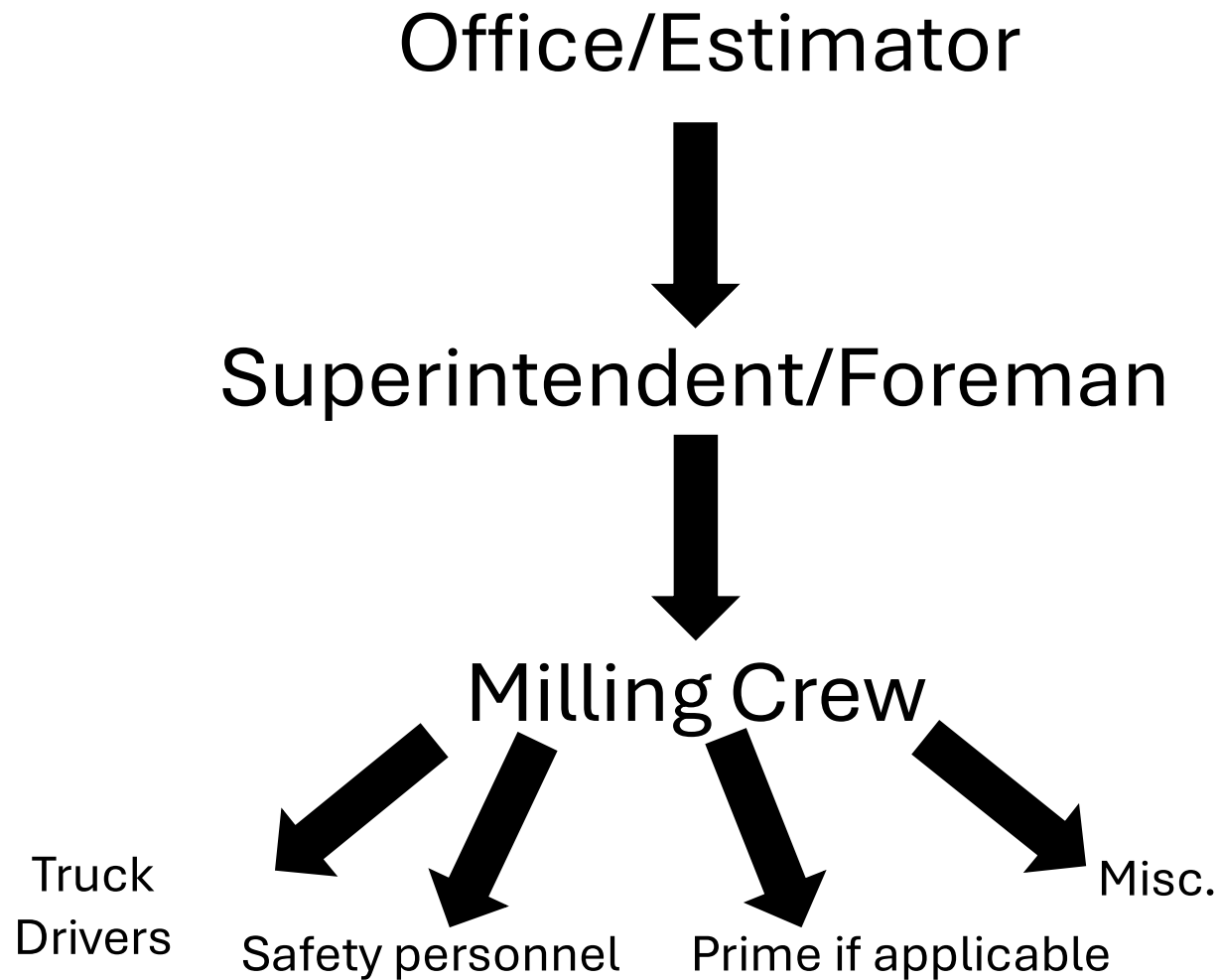


To give the paving crew a clean pallet to paint a masterpiece on.

Communication



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Production!
Production!
Production!





Zugänglichkeit zu Wartungspunkten

Cutter Drum



- * Check Milling Teeth and Holders

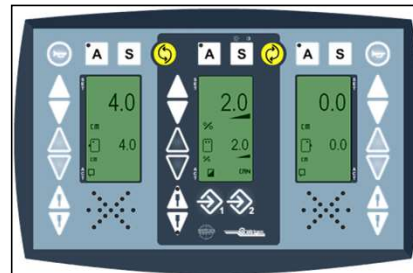
- * Check Kicker Paddles

- * Check wear items on cutter assembly

- * Make sure you have spare cutting teeth and holders

- * Check spray nozzles

Grade Controls



Control panel



Cylinder sensor



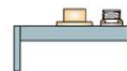
Wire-rope sensor



Slope sensor



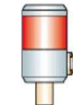
Ultrasonic sensor



Sonic Ski sensor



Rotary angle sensor



Laser sensor

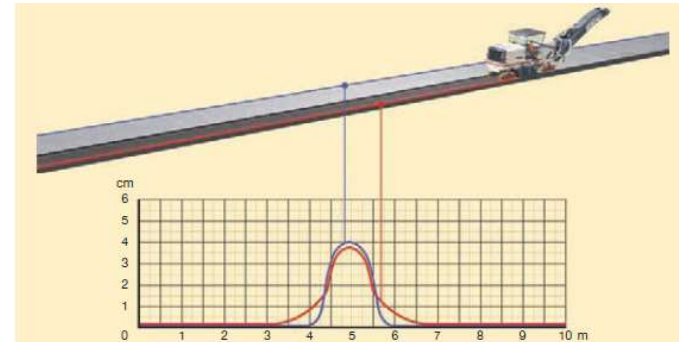


3D sensor

COPYING OR PROFILING?

- **Levelling with side plates**

- **Reference:** surface (road surface)
- **Sensor:** position measuring sensors,
hydr. cylinders, side plates
- **Milling depth:** sensor in the cylinder
measures up- and down
movements (distance changes)
of the side plates
- **Consider:** Longitudinal waves which are
smaller than the side plates
are levelled out.
Large unevennesses are not
detected and will be
automatically copied to the
new surface profile



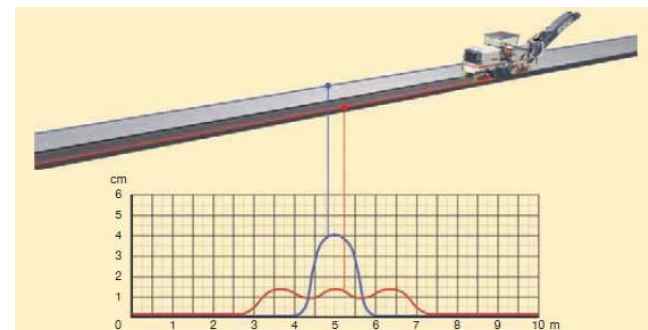


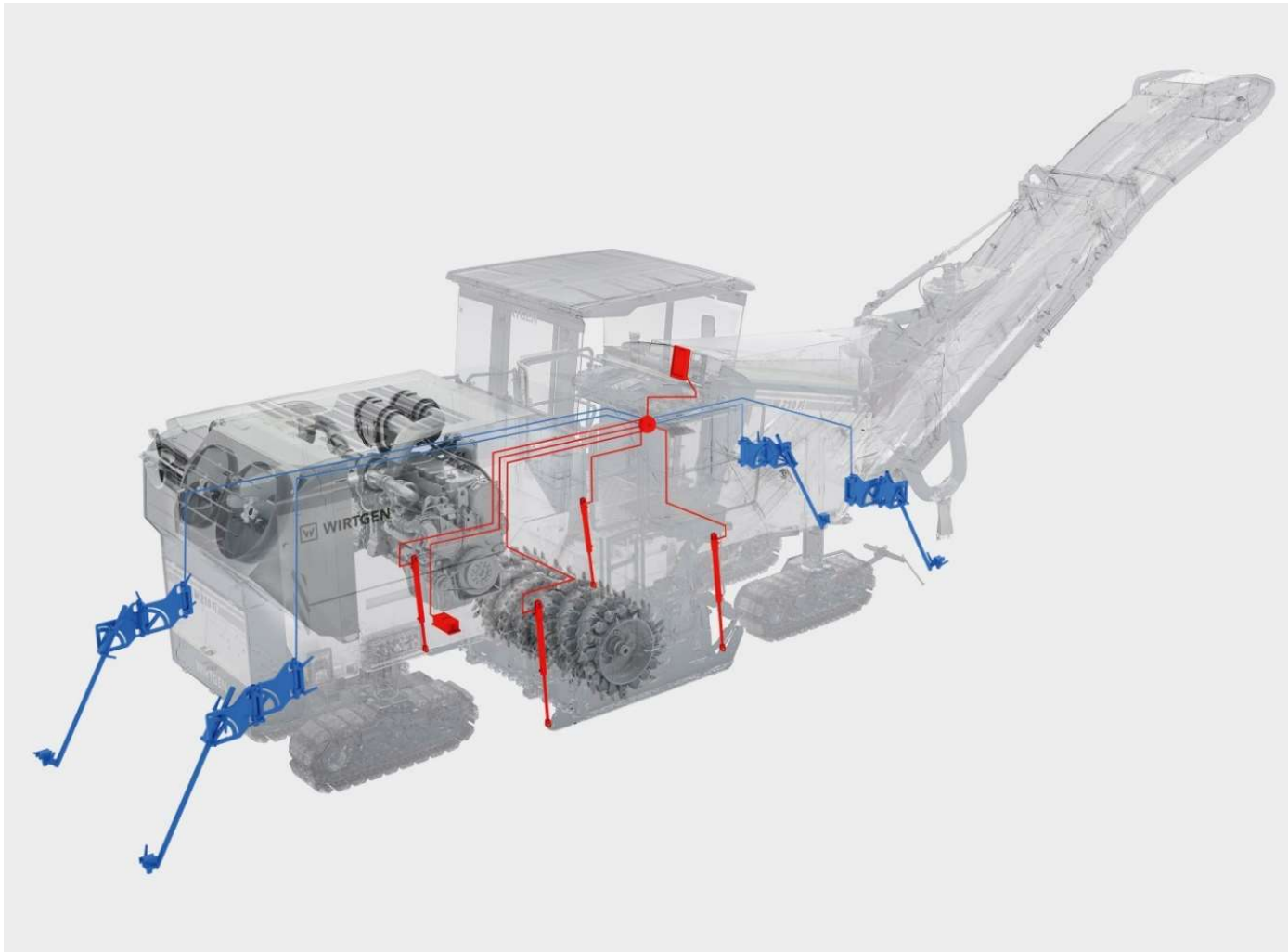
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COPYING OR PROFILING?

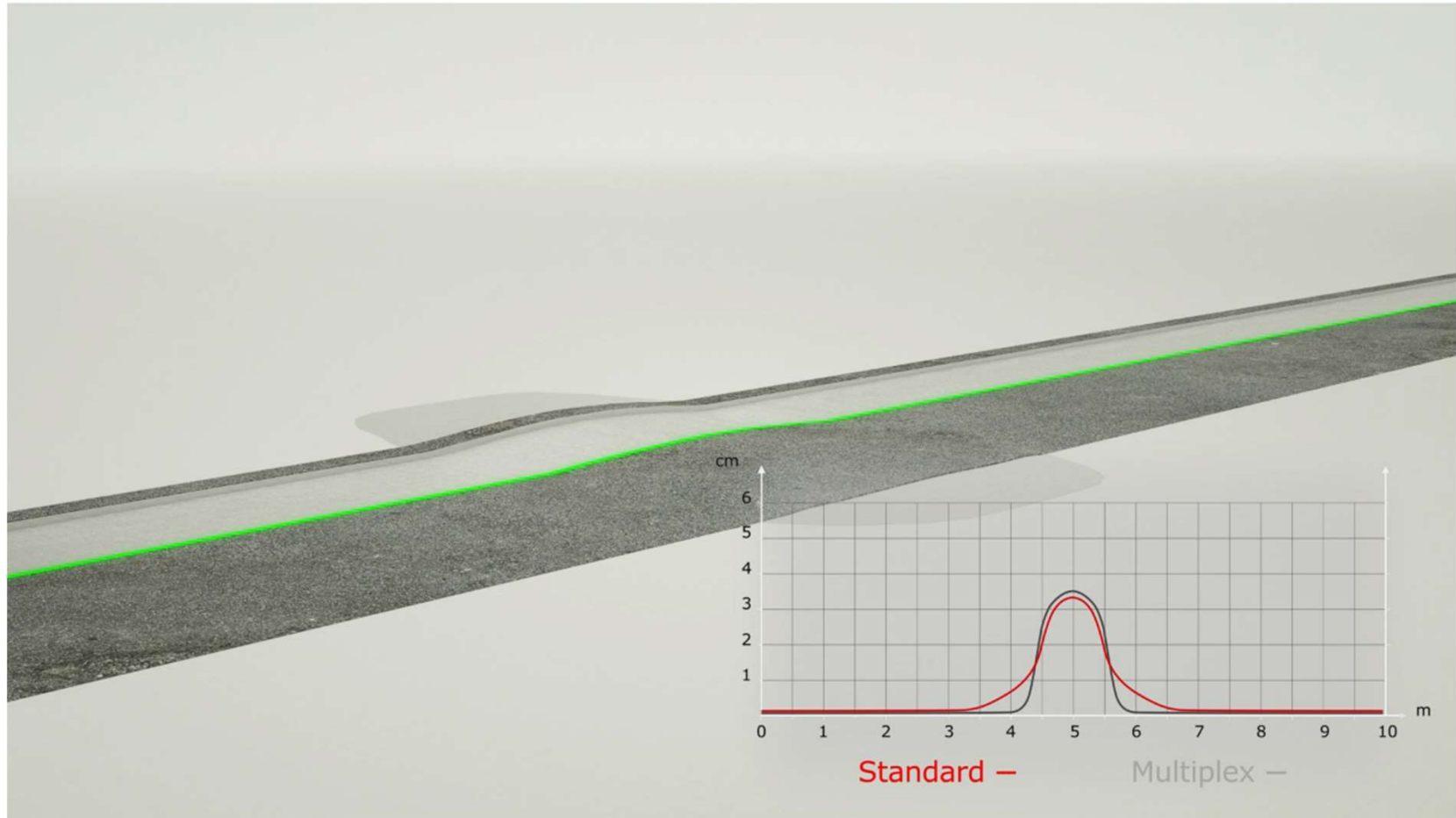
- **Levelling with Multiplex/Sonic Avg system**

- **Reference:** surface (road surface)
- **Sensor:** position measuring sensors,
hydraulic cylinders, side plates +
2 ultrasonic sensors
- **Milling depth:** Calculated average value of the
position measuring sensors and
the 2 ultrasonic sensors
- **Consider:** Long irregularities in the base
which are in the area of the 3
sensors can be levelled out easily.
Unevennesses which are outside of
the measurement area of the
sensors are not detected and
consequently copied to the new surface profile.





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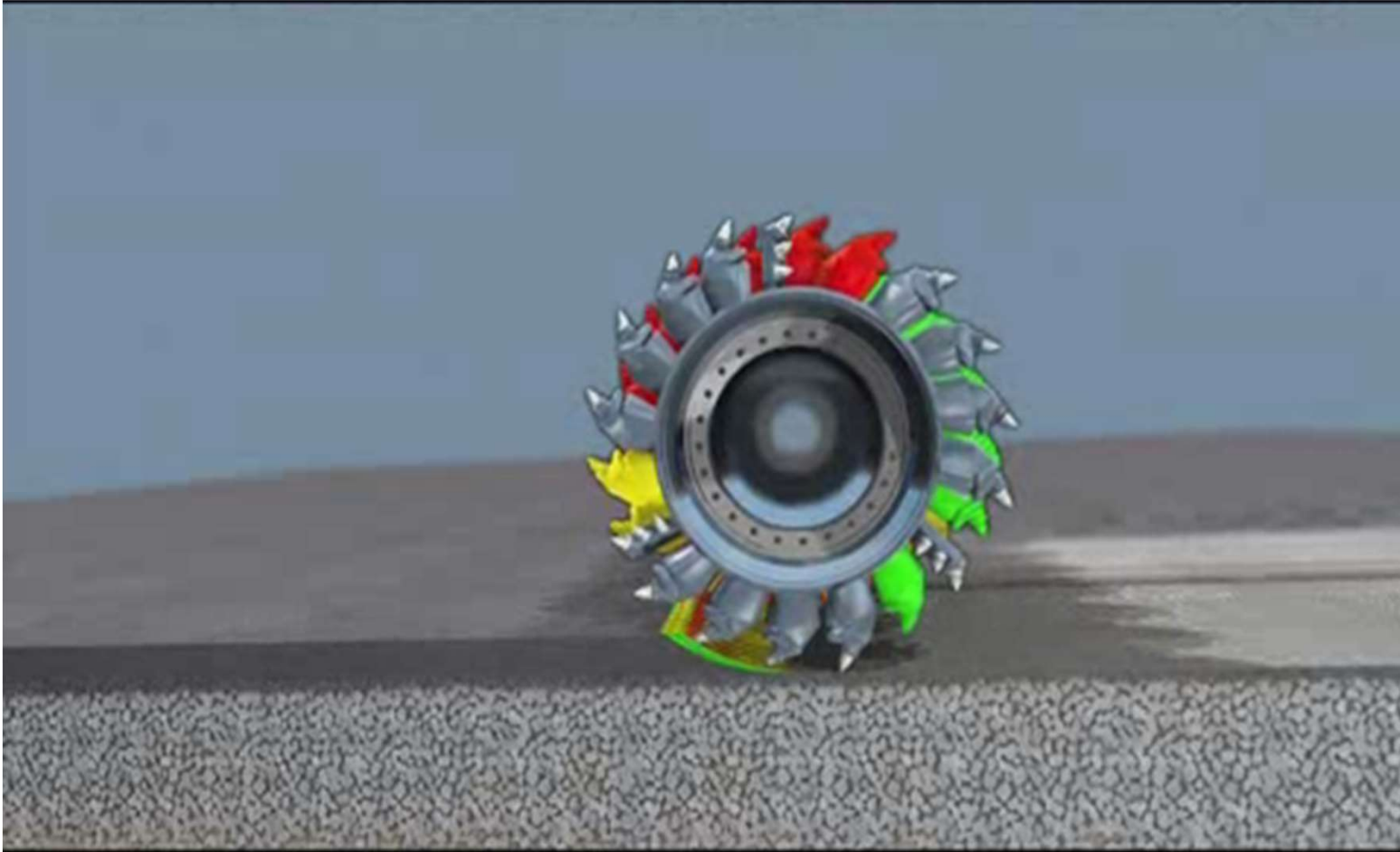


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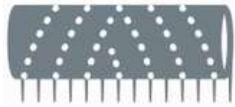


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Cutter line spacing



Influencing parameters milling surface



Tool spacing

- Large tool spacing (e.g. LA 25), rougher surface
- Small tool spacing (e.g. LA 6), finer surface



Milling speed

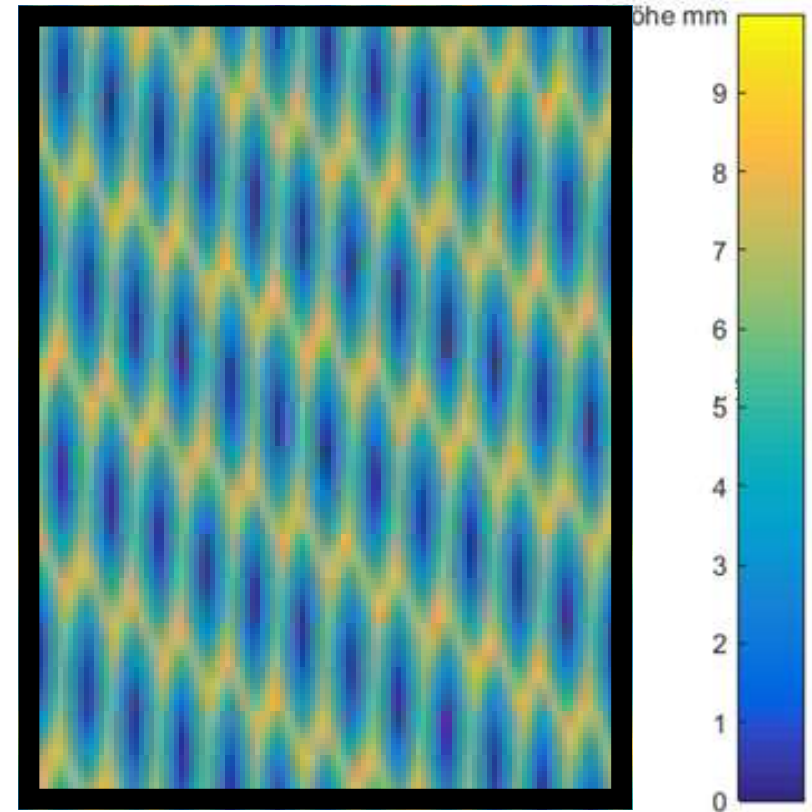
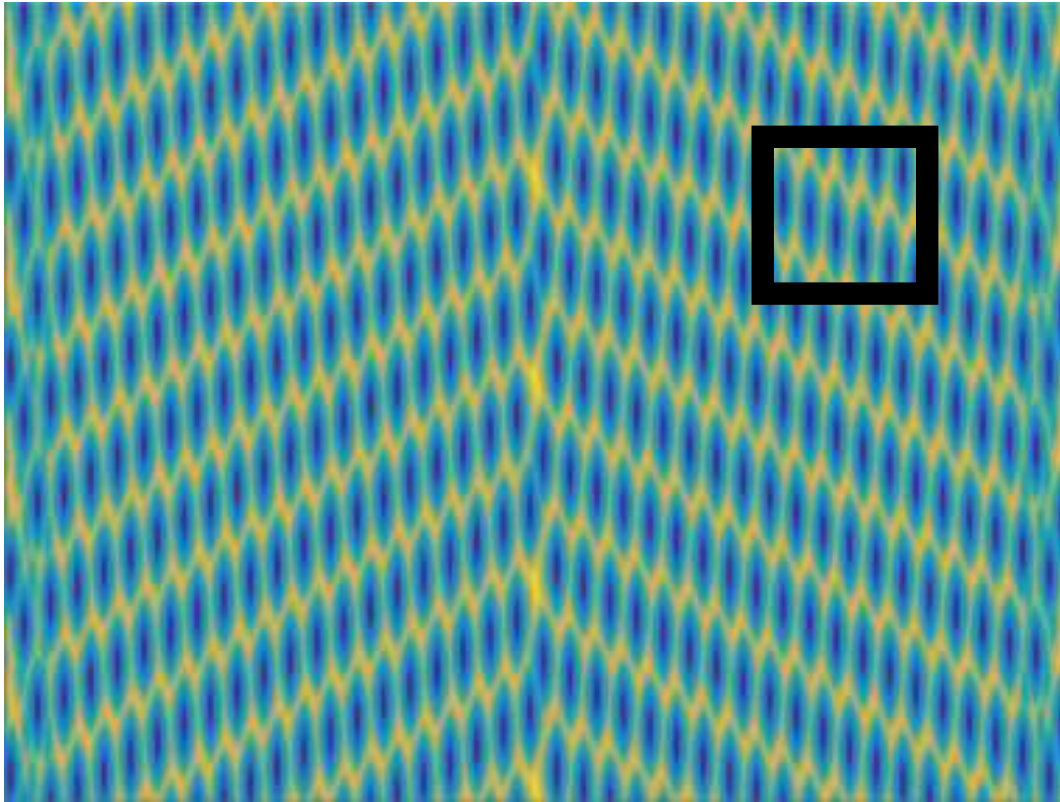
- High milling speed (e.g. 20 m/min.), rougher surface
- Low milling speed (e.g. 10 m/min.), finer surface



Milling drum speed

- Low milling drum speed (e.g. 96 u/min.), rougher surface
- High milling drum speed (e.g. 127 u/min.), finer surface

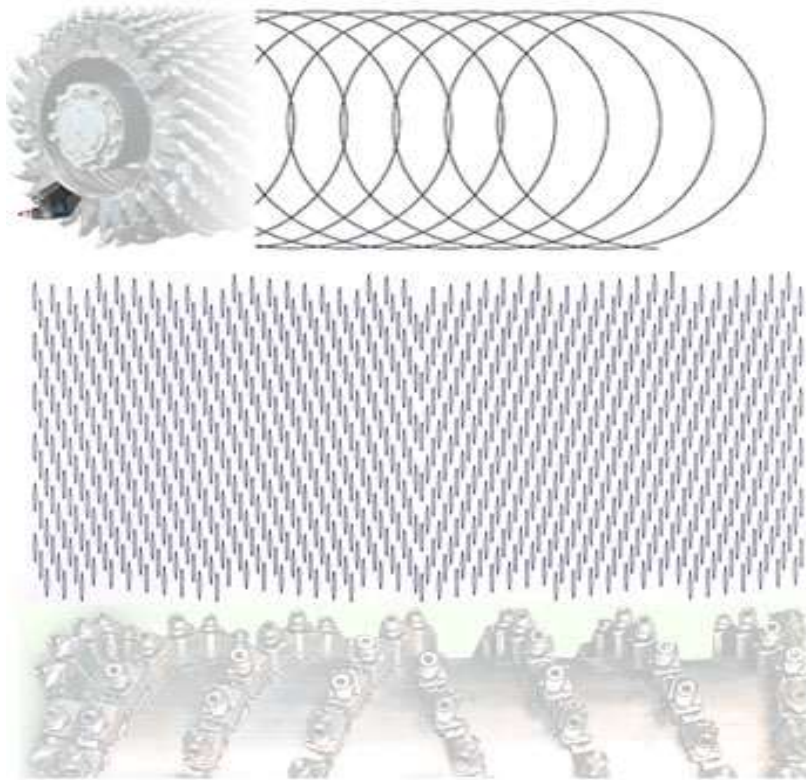
Surface with LA15 and 100 fpm Forward speed



60 FPM

Standard milling drum FB 2000_LA 15

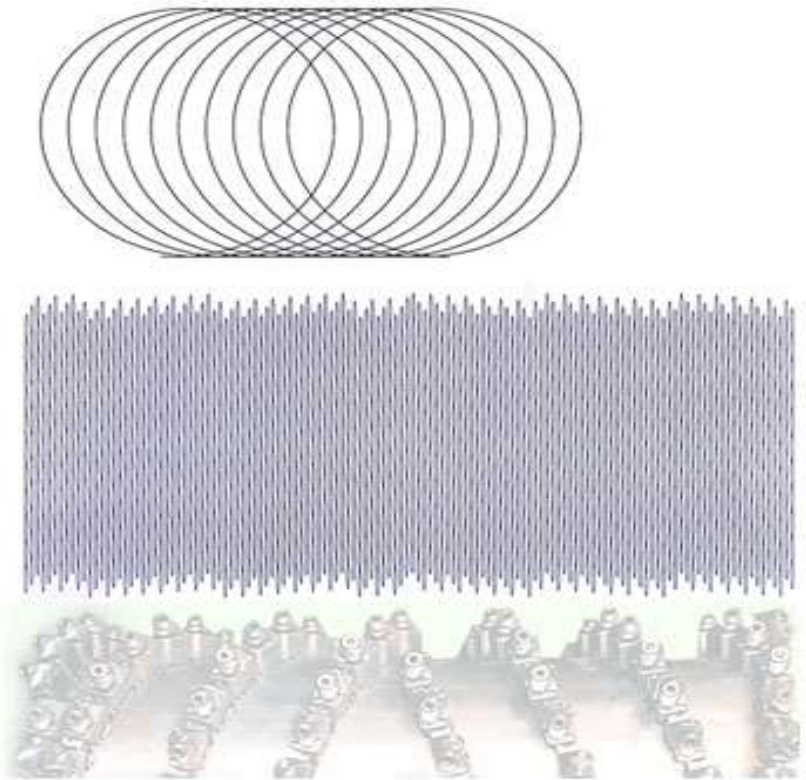
Advance speed: 16 m/min



30 FPM

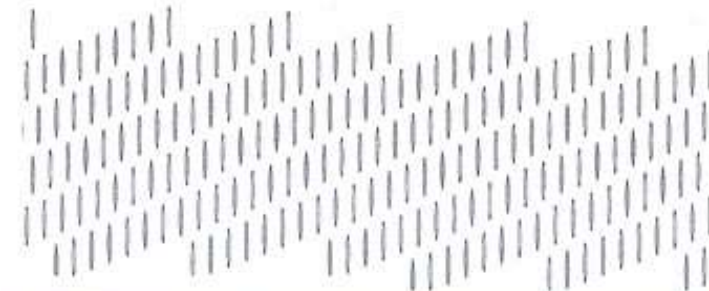
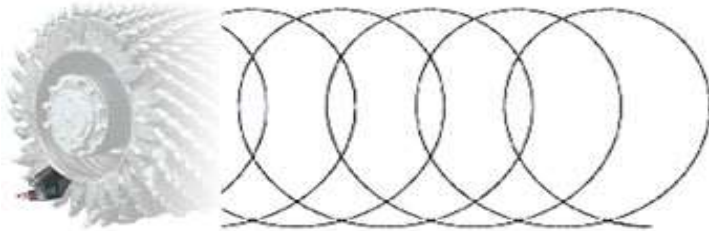
Standard milling drum FB 2000_LA 15

Advance speed: 8 m/min



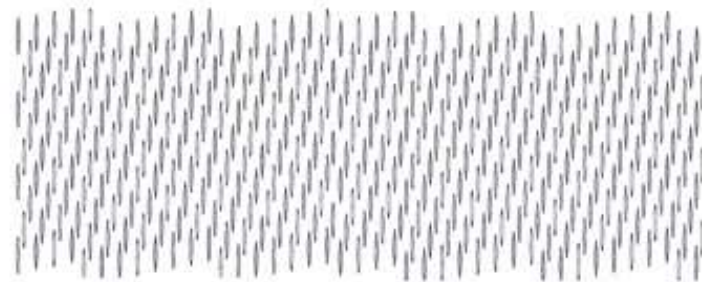
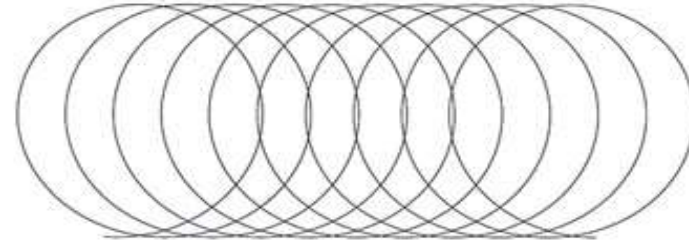
170 FPM

Standard milling drum FB 2000_LA 15
Advance speed: 40 m/min (theory)



85 FPM

Standard milling drum FB 2000_LA 15
Advance speed: 20 m/min (theory)



Drum rotation = const.



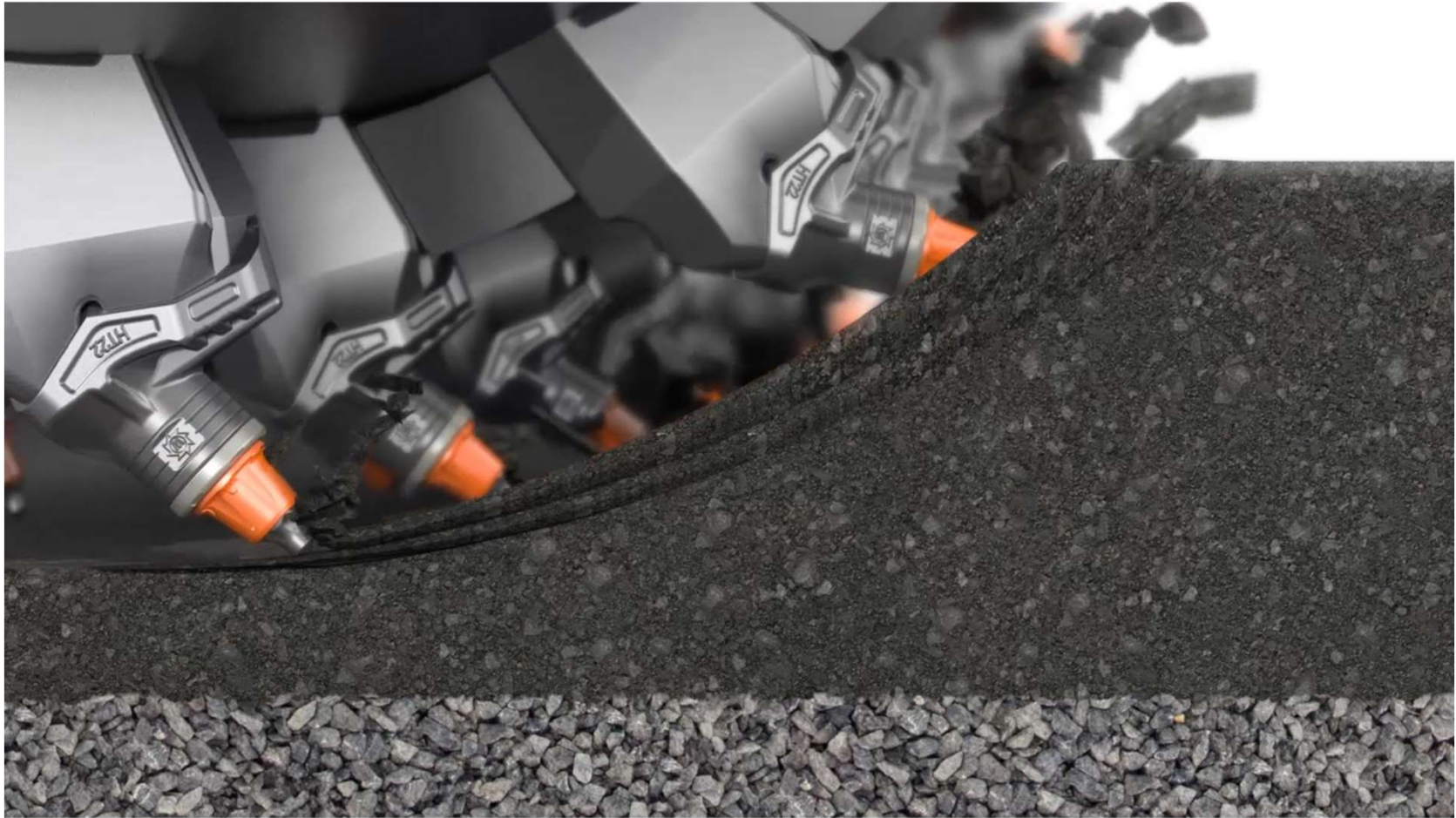
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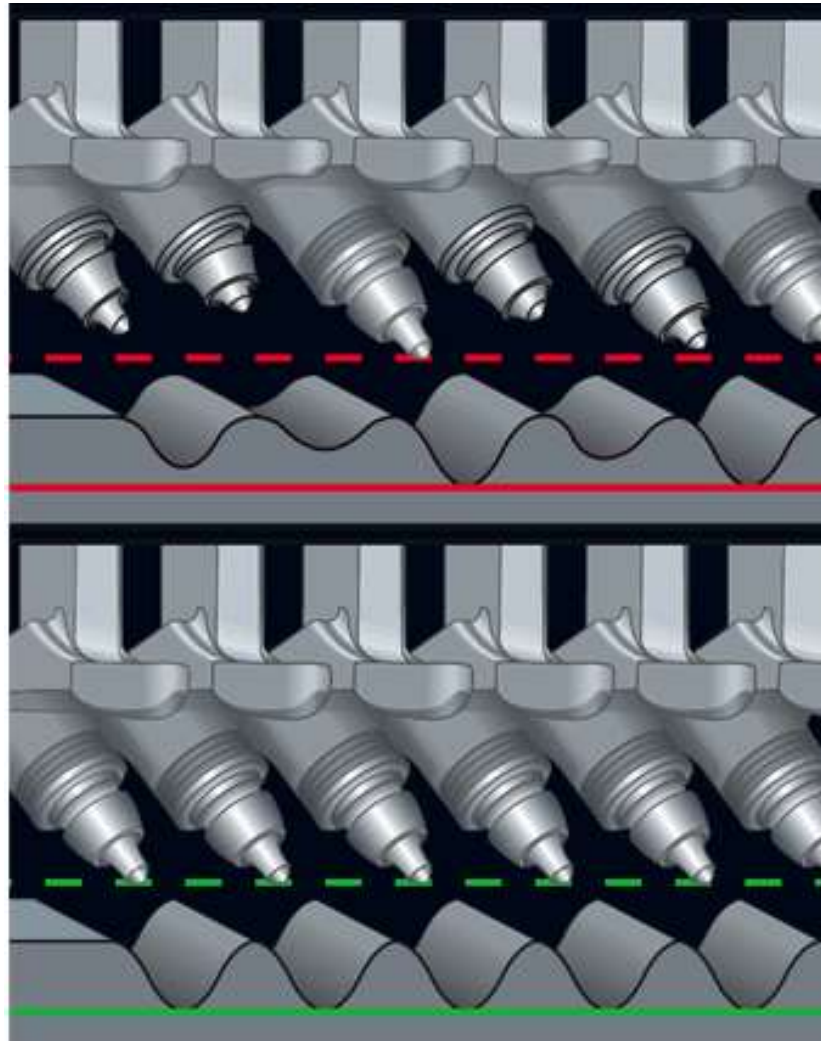
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The trade off milling at high speeds

- **Not actually cutting the depth you have set. Machine can't keep up.**
- **Poor pattern. Means lessened interlocking of new pavement to milled surface.**
- **Due to erratic depth, our asphalt tonnage is now off.**
- **Compaction numbers will fluctuate.**
- **Put unneeded amount of wear on machine.**
- **Sizing of material.**
- **This equals low quality, wasted materials, loss of money.**



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Drove my cost of operation up



Drove my quality down

2002 9 26

Conclusion

If we maintain our machine, we have bettered our chances to achieve quality.

If we slow our fpm down, we have bettered our chances to achieve quality.

If we communicate with our team regarding the job, we have bettered our chances to achieve quality.

If we do all of these things while putting SAFETY first, we WILL achieve quality.

Thank You



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CLOSE TO OUR CUSTOMERS

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