

Surface Roughness Recommendations

	Measurement	Dynamic Surfaces Recommendation	Static & Groove Surfaces Recommendation
Medium Gas	Ra	< 0,1µm	< 0,1µm
	Rz	< 0,5µm	< 0,5µm
	Rmz	70 - 90% at depth of p = 0,25(Rtm)	70 - 90% at depth of p = 0,25(Rtm)
	Rpk	< 0,05µm	< 0,05µm
	Rvk	< 0,05µm	< 0,05µm
Medium Water	Ra	< 0,2µm	0,3µm
	Rz	< 0,8µm	< 1,0µm
	Rmz	60 - 75% at depth of p = 0,25(Rtm)	60- 75% at depth of p = 0,25(Rtm)
	Rpk	< 0,15µm	< 0,15µm
	Rvk	< 0,1µm	< 0,1µm
Medium Oil	Ra	< 0,4µm	< 0,4µm
	Rz	< 1,0µm	< 1,0µm
	Rmz	50 - 70% at depth of p = 0,25(Rtm)	50 - 70% at depth of p = 0,25(Rtm)
	Rpk	< 0,2µm	< 0,2µm
	Rvk	< 0,2µm	< 0,2µm

Surface Roughness Parameters

Surface condition is 1 of the very important factors influencing the lifetime and the leakage rate of seals. When surface conditions are not good enough, seals will start leaking or wear out very quickly.

This is why AST specifies surface roughness parameters without taking in account the machine patterns and machine restrictions. Please be advised that also the machine pattern can influence leakage and / or wear.

If you are not able to produce conform these parameters, please be aware that it will possibly lead to more leakage or wear.

Other sealing materials can work with other parameters depending on speed, pressure etc. For more information about other materials please contact AST.

For special contact surfaces like ceramic coatings, duplex etc. , please contact AST.

Roughness Parameters

Ra -> Arithmetic mean surface roughness:
Arithmetical mean of the sums of all profile values.

Rz -> Surface roughness depth:
Mean value of the five Rz-values from the five sampling lengths over the total measured length.

Rmr -> Material proportion of the profile:
Quotient from the sum of all material lengths of the profile elements at the specified section height and the measured length.

Rpk -> Reduced peak height:
The average height of the protruding peaks above the roughness core profile.

Rvk -> Reduced valley depth:
The average depth of the profile valleys projecting through the roughness core profile.

