

## Is there a table with an overview of applications, materials and seal designs for wind turbines?

There is now – and it addresses the question of which sealing designs optimize wind turbine efficiency. The dynamic evolution of wind energy technologies has been accompanied by a sharply rising learning curve for materials and seal design over the past 20 years. Many established materials have evolved into high-performance sealing solutions through new material combinations and seal designs. Advances in production and testing methods are making seals increasingly sustainable, durable and powerful.

### Which combinations are especially recommended? An overview:

Area of use/application	Material class	Sealing solution
<b>Main bearings</b>		
Grease-lubricated main bearings	NBR, HNBR, PU	Seventomatic® Radiamatic® Enviromatic
Oil-lubricated main bearings	NBR, HNBR	Seventomatic® Radiamatic®
<b>Blade pitch systems</b>		
Blade bearings	NBR	Extruded seals with single or double lip Axial or radial sealing Blast seal
Electrical pitch systems	FKM	Simmerring® (radial shaft seal)
Hydraulic pitch systems – hydraulic cylinders	PTFE, PU	Complete piston accumulator system Piston seal (Simko) Rod seal Guide bands Wiper seal
<b>Main gearboxes</b>		
Main gear box	FKM	Simmerring® (radial shaft seal)
<b>Machine house (nacelle)</b>		
Azimuth brakes	PTFE, PU	Piston seal Rod seal Guide bands Wiper seal
Yaw bearing	NBR	Extruded seals with single or double lip Axial or radial sealing Blast seal
Electric nacelle yaw system	FKM	Simmerring® (radial shaft seal)
Hydraulic pressure unit		Diaphragm accumulator Piston Accumulator
Rotor brake	PTFE, PU	Piston seal Rod seal Guide bands Wiper seal
<b>Offshore wind turbines</b>		
Buoyancy module (floating offshore wind turbines)	EPDM	Rubber blocks Friction pads
Transition Piece (TP)	EPDM	MP-TP seal Airtight platform seal (ATP)