

Standard and special materials

Standard materials				
Gears	20NCD2 35NCD6 60C40 S/steel		Delrin Brass CuZn40P63 Tufnol Z10 CNF 18,09 (303) Z6 CND 17,12 (316)	
Wormwheels	Bronze CuAl10NiFe4	Delrin	Tufnol	Cast iron
Worms	20NCD2	Delrin	Laiton	
Chains and sprockets	20NCD2	Delrin	Steel	Stainless steel
Pulleys	Aluminium 6082	20NCD2	Stainless steel	Z10CNF 18,09 (303)
Bevel gears	60 C40	Delrin	Stainless steel Z10 CNF 18,09 (303)	
Racks	60 C40 S/steel	Z10 CNF 18,09 (303)	Delrin	Brass

Special materials	
60 C40	} Can be through or induction-hardened. Hardness 50-55 HRc
42 CD4	
35 NCD 6	} Very resistant
35 NCD 14	
100 C6	
20NCD2	Can be case-hardened 57-62 HRc.
Z12 CF 13	Stainless steel can be through-hardened to 35-45 HRc.
30CD12	Nitriding steel
Z10 CNF 18,09	Stainless steel
Aluminium	
Delrin	Maximum working temperature: 140°C
Nylon	Maximum working temperature: 160°C
Phosphor bronze	
Brass	
Tufnol	Maximum working temperature: 130°C

Material information

Materials	Properties	Tensile strength N/mm ²	Elongation after fracture %	Proof stress 0,2 % N/mm ²	Surface stress Sc	Bending stress Sb
Nylon 66		0,62 - 0,82	20% - 200%	-	500	3900
Delrin (polyoxymethylene)		69	60%	-	500	3900
Tufnon	Fine fibres	68	-	-	560	4500
Cast iron	GR17 (260)	260	-	-	1400	9000
Aluminium alloy	HR15N	295		230	500	13000
Aluminium bronze CuAl10NiFe4		420 - 720	6% - 8%	140 - 660	900	9000
Phosphor bronze CuSn12		360 - 500	18% - 40% 6,25%	170 - 280	700	7000
34C10		430	18%	-	1400	17000
34C10 Case-hardened	Surface hardness	-	-	-	9200	40000
35NCD6		850 -1550	5% - 13%	635 - 1125	3000	32000
35NCD6	By production or through-hardening	-	-	-	5000	26500
20NCD2 Case-hardened	Surface hardness	780 - 1080	10%	-	11000	50000
Z10CNF18 09 S/steel 303		480 - 510	35% - 40%	180 - 200	1800	20000
60C40		510 - 550	16% - 17%	-	1400	19000
60C40	Hardened				2800	17000

When using the above data in any calculations, please note that the data is given as a guide only. HPC decline responsibility for any unforeseen consequences as many factors are not under our control.