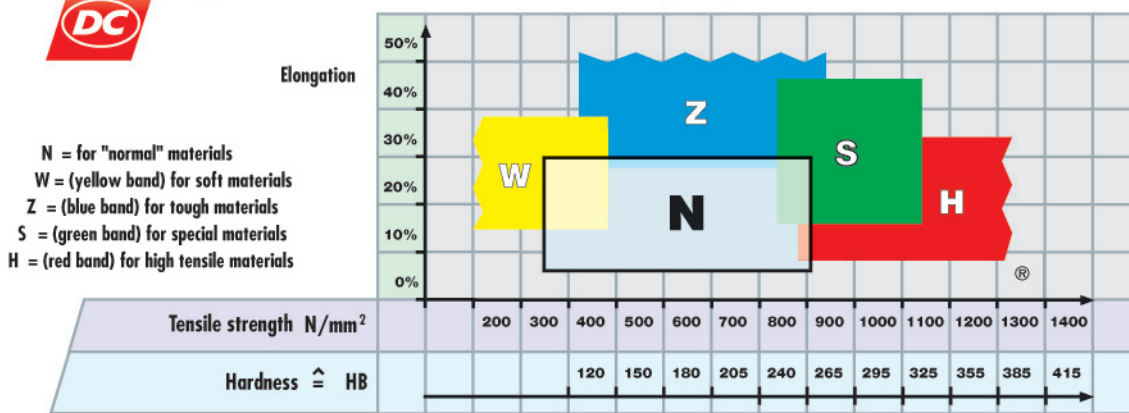



High performance threading system



Material classification



Material groups	Material designation	Hardness (HB)	Tensile strength (N/mm ²)	Elongation ^A (%)	V _c (m/min)	
					Standard +V/+NI	Coated TN/TC/VS
10 Steels	11 Free-cutting steels	< 200	< 700	< 10	10 – 15	20 – 30
	12 Structural / cementation steels	< 200	< 700	< 30	10 – 15	20 – 30
	13 Carbon steels	< 300	< 1000	< 20	8 – 12	16 – 24
	14 Alloy steels < 850 N/mm ²	< 250	< 850	< 30	8 – 12	16 – 24
	15 Alloy steels hard./temp. >850 - <1150 N/mm ²	> 250	> 850	< 30	3 – 5	6 – 12
	16 High tensile alloy steels	> 250	> 850	< 12	3 – 5	3 – 5
20 Stainless steels	21 Free machining stainless steels	< 250	< 850	< 25	10 – 15	20 – 30
	22 Austenitic stainless steels	< 250	< 850	> 20	4 – 8	8 – 16
	23 Ferritic + martensitic <850 N/mm ²	< 250	< 850	> 20	4 – 8	8 – 16
	24 Ferritic + martensitic >850 - <1150 N/mm ²	> 250	> 850	> 15	3 – 5	6 – 12
30 Cast iron	31 Cast iron	< 250	< 850	< 10	10 – 15	20 – 30
	32 Spheroidal graphite + malleable cast iron	< 250	< 850	> 10	10 – 15	20 – 30
40 Titanium	41 Pure titanium	< 250	< 850	> 20	4 – 8	
	42 Titanium alloys	> 250	> 850	< 20		3 – 5
50 Nickel	51 Nickel alloys 1 <850N/mm ²	< 250	< 850	> 25	3 – 5	6 – 12
	52 Nickel alloys 2 >850 - <1150N/mm ²	> 250	> 850	< 25		4 – 8
60 Copper	61 Pure copper (electrolitic copper)	< 120	< 400	> 12	8 – 12	
	62 Short chip brass + phosphor bronze + gun metal	< 200	< 700	< 12	20 – 30	
	63 Long chip brass	< 200	< 700	> 12	16 – 24	
70 Aluminium Magnesium	71 Al / Mg unalloyed	< 100	< 350	> 15	10 – 15	
	72 Al alloyed Si < 1.5%	< 150	< 500	> 15	20 – 30	
	73 Al alloyed Si > 1.5% - <10%	< 120	< 400	< 15	10 – 15	20 – 30
	74 Al alloyed Si > 10%, Mg-Alloys	< 120	< 400	< 10	10 – 15	20 – 30
80 Plastic compounds	81 Thermoplastics	-	-	-	20 – 30	
	82 Duroplastics	-	-	-	8 – 16	16 – 24
	83 Glass fibre reinforced plastics	-	-	-	4 – 8	8 – 16