

ISO 6336-2:2019-11 (E)

Calculation of load capacity of spur and helical gears - Part 2: Calculation of surface durability (pitting)

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms, definitions, symbols and abbreviated terms	2
3.1	Terms and definitions	2
3.2	Symbols and abbreviated terms	2
4	Pitting damage and safety factors	6
5	Basic formulae	7
5.1	General	7
5.2	Safety factor for surface durability (against pitting), SH	8
5.3	Contact stress, H	8
5.4	Permissible contact stress, HP	9
5.4.1	General	9
5.4.2	Determination of permissible contact stress, HP -- Principles, assumptions and application	10
5.4.3	Permissible contact stress, HP: Method B	10
5.4.4	Permissible contact stress for limited and long life: Method B	11
6	Zone factor, ZH, and contact factors, ZB and ZD	13
6.1	General	13
6.2	Zone factor, ZH	14
6.2.1	General	14
6.2.2	Graphical values	14
6.2.3	Determination by calculation	14
6.3	Contact factors, ZB and ZD, for $\alpha \leq 20^\circ$	14
6.4	Contact factors, ZB and ZD, for $\alpha > 20^\circ$	17
7	Elasticity factor, ZE	17
8	Contact ratio factor, Z	18
8.1	General	18
8.2	Determination of contact ratio factor, Z	18
8.2.1	Graphical values	18
8.2.2	Determination by calculation	19
8.3	Calculation of transverse contact ratio, α , and overlap ratio, ϵ	20
8.3.1	Transverse contact ratio, α	20
8.3.2	Overlap ratio, ϵ	20
9	Helix angle factor, Z _β	21
10	Strength for contact stress	21
10.1	General	21
10.2	Allowable stress numbers (contact), H _{lim} : Method B	21
10.3	Allowable stress number values: Method BR	22

11	Life factor, ZNT(forflanks)	22
11.1	General	22
11.2	Life factor, ZNT: Method A	22
11.3	Life factor, ZNT: Method B	22
12	Influenceoflubricantfilm,factorsZL, Zv and ZR	24
12.1	General	24
12.2	Influence of lubricant film: Method A	24
12.3	Influence of lubricant film, factors ZL, Zv and ZR: Method B	24
12.3.1	General	24
12.3.2	Factors ZL, Zv and ZR for reference stress	25
12.3.3	Factors ZL, Zv and ZR for static stress	30
13	Workhardeningfactor,ZW	30
13.1	General	30
13.2	Work hardening factor, ZW: Method A	30
13.3	Work hardening factor, ZW: Method B	31
13.3.1	Surface-hardened steel pinion with through-hardened steel gear	31
13.3.2	Through-hardened steel pinion with through-hardened steel gear	33
13.3.3	Surface-hardened steel pinion with ductile iron gear	34
14	Size factor, ZX	36
	Bibliography	37