

DIN ISO 21771:2014-08 (E)

Gears - Cylindrical involute gears and gear pairs - Concepts and geometry (ISO 21771:2007)

Contents		Page
1	Scope	9
2	Normative references	9
3	Symbols, subscripts and units	10
3.1	Symbols	10
3.2	Subscripts	16
3.3	Units	17
4	Individual cylindrical gears	18
4.1	Concepts for an individual gear	18
4.2	Reference surfaces, datum lines and reference quantities	20
4.3	Involute helicoids	25
4.4	Angular pitch and pitches	29
4.5	Diameters of gear teeth	32
4.6	Gear tooth height	32
4.7	Tooth thickness, space width	33
5	Cylindrical gear pairs	35
5.1	Concepts for a gear pair	35
5.2	Mating quantities	36
5.3	Calculation of the sum of the profile shift coefficients	39
5.4	Tooth engagement	40
5.5	Backlash	48
5.6	Sliding conditions at the tooth flanks	49
6	Tooth flank modifications	52
6.1	Tooth flank modifications which restrict the usable flank	52
6.2	Transverse profile modifications	53
6.3	Flank line (helix) modifications	56
6.4	Flank face modifications	57
6.5	Descriptions of modifications by functions	59
7	Geometrical limits	60
7.1	Counterpart rack tooth profile	61
7.2	Machining allowance	62
7.3	Deviations in tooth thickness	63
7.4	Generating profile shift, generating profile shift coefficient	64
7.5	Generated root diameter	65
7.6	Usable area of the tooth flank, tip and root form diameter	65
7.7	Undercut	67
7.8	Overcut	67
7.9	Minimum tooth thickness at the tip circle of a gear	67
	Annex A (informative) Calculations related to tooth thickness	68
	Bibliography	91
	National foreword	3
	National Annex NA (informative) Bibliography	4
	National Annex NB (normative) Corrections	5