

# ISO/TR 6336-30:2022-12 (E)

## Calculation of load capacity of spur and helical gears - Part 30: Calculation examples for the application of ISO 6336 parts 1,2,3,5

---

<b>Contents</b>		<b>Page</b>
Foreword .....		iv
Introduction .....		v
<b>1</b>	<b>Scope .....</b>	<b>1</b>
<b>2</b>	<b>Normative references .....</b>	<b>1</b>
<b>3</b>	<b>Terms, definitions, symbols and units .....</b>	<b>1</b>
<b>3.1</b>	<b>Terms and definitions .....</b>	<b>1</b>
<b>3.2</b>	<b>Symbols and units .....</b>	<b>1</b>
<b>4</b>	<b>Worked examples .....</b>	<b>6</b>
<b>4.1</b>	<b>General .....</b>	<b>6</b>
<b>4.2</b>	<b>Qualifying comments .....</b>	<b>6</b>
<b>4.2.1</b>	<b>Calculation of base pitch deviation, <math>f_{pb}</math> .....</b>	<b>6</b>
<b>4.2.2</b>	<b>Calculation of running-in allowance, <math>y</math>, for the transverse load factors <math>K_H</math> and <math>K_F</math> .....</b>	<b>7</b>
<b>4.2.3</b>	<b>Calculation of mesh stiffness, <math>c</math> .....</b>	<b>7</b>
<b>4.2.4</b>	<b>Application of lubricant film <math>Z_L</math>, <math>Z_v</math> and <math>Z_R</math>, hardness <math>Z_W</math> and size <math>Z_X</math> influence factors .....</b>	<b>7</b>
<b>4.2.5</b>	<b>Calculation of the permissible contact stress in the limited life range (<math>Z_N</math> and <math>Z_{NT}</math>) .....</b>	<b>7</b>
<b>4.2.6</b>	<b>Application of work hardening factor, <math>Z_W</math> .....</b>	<b>8</b>
<b>4.2.7</b>	<b>Determination of <math>R_z</math> .....</b>	<b>8</b>
<b>4.2.8</b>	<b>Facewidth for calculations involving double helical gears .....</b>	<b>8</b>
<b>4.2.9</b>	<b>Calculation of <math>f_{H5}</math> and <math>f_H</math> for double helical gears .....</b>	<b>8</b>
<b>4.2.10</b>	<b>Calculation of <math>f_{H5}</math> and <math>f_H</math> .....</b>	<b>8</b>
<b>4.2.11</b>	<b>Helix tolerance <math>f_{H5}</math> and <math>f_H</math> for double helical gears .....</b>	<b>8</b>
<b>4.2.12</b>	<b>Calculation of root diameter, <math>d_f</math> .....</b>	<b>8</b>
<b>4.2.13</b>	<b>Calculations for internal gears .....</b>	<b>8</b>
<b>4.2.14</b>	<b>Rounding of values .....</b>	<b>8</b>
<b>4.2.15</b>	<b>Deviations of values .....</b>	<b>8</b>
<b>4.2.16</b>	<b>Nominal and generated values .....</b>	<b>9</b>
<b>4.2.17</b>	<b>ISO 1328-1:2013 .....</b>	<b>9</b>
<b>4.2.18</b>	<b>Values for reference only .....</b>	<b>9</b>
<b>4.3</b>	<b>Example 1: Single helical case carburized gear pair .....</b>	<b>9</b>
<b>4.4</b>	<b>Example 2: Single helical through-hardened gear pair .....</b>	<b>14</b>
<b>4.5</b>	<b>Example 3: Spur through-hardened gear pair .....</b>	<b>18</b>
<b>4.6</b>	<b>Example 4: Spur case carburized gear pair .....</b>	<b>22</b>
<b>4.7</b>	<b>Example 5: Spur gear pair with an induction hardened pinion and through-hardened cast gear .....</b>	<b>26</b>
<b>4.8</b>	<b>Example 6: Spur internal through-hardened gear pair .....</b>	<b>30</b>
<b>4.9</b>	<b>Example 7: Double helical through-hardened wrought gear pair .....</b>	<b>34</b>
<b>4.10</b>	<b>Example 8: Single helical case carburized gear pair .....</b>	<b>38</b>
	<b>Annex A (informative) Example 1 detailed calculation .....</b>	<b>43</b>
	<b>Bibliography .....</b>	<b>63</b>