

FORMULEBLAD**1. BANDAANDRYWING**

$$1.1 \quad N_{dr} \times D_{dr} = N_{gd} \times D_{gd}$$

$$1.2 \quad \text{Bandspoed} = \frac{\pi DN}{60} \quad \text{waar N in r/min is}$$

$$1.3 \quad \text{Bandspoed} = \frac{\pi(D+t) \times N}{60} \quad (t = \text{banddikte})$$

$$1.4 \quad \text{Bandmassa} = \text{oppervlakte} \times \text{lengte} \times \text{digtheid} \quad (A = \text{dikte} \times \text{breedte/wydte})$$

$$1.5 \quad \text{Spoedverhouding} = \frac{\text{diameter van gedrewe katrol}}{\text{diameter van dryfkatrol}}$$

$$1.6 \quad \text{Bandlengte (plat band)} = [(D + d) \times 1,57] + 2 \times \text{senterafstand}$$

$$1.7 \quad \text{Oopbandlengte} = \frac{\pi(D+d)^2}{2} + \frac{(D-d)^2}{4c} + 2c$$

$$1.8 \quad \text{Gekruisestbandlengte} = \frac{\pi(D+d)^2}{2} + \frac{(D+d)^2}{4c} + 2c$$

$$1.9 \quad \text{Verhouding tussen stywe kant en slap kant} = \frac{T_1}{T_2}$$

$$1.10 \quad \text{Drywing (P)} = \frac{(T_1 - T_2) \pi DN}{60} \quad \text{waar N in r/min is}$$

T_1 = krag in die stywe kant

T_2 = krag in die slap kant

$T_1 - T_2$ = effektiewe krag (T_e)

$$1.11 \quad \text{Drywing (P)} = (T_1 - T_2) \times V \quad \text{waar V = bandspoed in m/s}$$

$$1.12 \quad \text{Drywing (P)} = \frac{2\pi NT}{60} \quad \text{waar N in r/min is}$$

$$1.13 \quad \text{Wydte/Breedte} = \frac{T_1}{\text{toelaatbaretrekkrag}}$$

2. SPANNING EN VORMVERANDERING

$$2.1 \quad \text{Spanning} = \frac{\text{krag}}{\text{oppervlakte}} \quad \text{of} \quad \left(\sigma = \frac{F}{A} \right)$$

$$2.2 \quad \text{Vormverandering} (\epsilon) = \frac{\text{verandering in lengte} (\Delta L)}{\text{oorspronklike lengte} (L)}$$

$$2.3 \quad \text{Young se modulus (E)} = \frac{\text{spanning}}{\text{vormverandering}} \text{ of } \left(\frac{\sigma}{\varepsilon} \right)$$

$$2.4 \quad \text{Oppervlakte van 'n ronde staaf} = A = \frac{\pi d^2}{4}$$

$$2.5 \quad \text{Oppervlakte van 'n pyp} = A = \frac{\pi(D^2 - d^2)}{4}$$

$$2.6 \quad \text{Oppervlakte van 'n vierkantstaaf} = A = L_2 \text{ of } A = L \times B$$

3. HIDROULIKA

$$3.1 \quad \text{Druk (P)} = \frac{\text{krag (F)}}{\text{oppervlakte (A)}}$$

$$3.2 \quad \text{Volume} = (\text{dwarsdeursnee-oppervlakte}) \times \text{slaglengte}$$

$$3.3 \quad \text{Arbeid verrig} = \text{krag} \times \text{afstand}$$

4. SPYE EN SPYGLEUWE

$$4.1 \quad \text{Wydte/Breedte van spy} = \frac{\text{diameter van as}}{4}$$

$$4.2 \quad \text{Dikte van spy} = \frac{\text{diameter van as}}{6}$$

$$4.3 \quad \text{Lengte van spy} = 1,5 \times \text{diameter van as}$$

$$4.4 \quad \text{Standaardtaps vir tapse spy} = 1 \text{ in } 100 \text{ of } 1 : 100$$

5. HEFBOME

$$5.1 \quad \text{Meganiese voordeel (MA)} = \frac{\text{las(W)}}{\text{mag(F)}}$$

$$5.2 \quad \text{Snelheidsverhouding} = \frac{\text{insetbeweging}}{\text{uitsetbeweging}}$$

$$5.3 \quad \text{Insetbeweging (IB)} = \text{mag} \times \text{afstand beweeg deur mag}$$

$$5.4 \quad \text{Uitsetbeweging (UB)} = \text{las} \times \text{afstand beweeg deur las}$$

6. RATAANDRYWING

$$6.1 \quad N_{dr} \times D_{dr} = N_{gd} \times D_{gd}$$

$$6.2 \quad \text{Drywing (P)} = \frac{2\pi NT}{60}$$

$$6.3 \quad \text{Ratverhouding} = \frac{\text{produk van die getal tande op gedrewe ratte}}{\text{produk van die getal tande op dryfratte}}$$

$$6.4 \quad \frac{N_{\text{inset}}}{N_{\text{uitset}}} = \frac{\text{produk van die getal tande op gedrewe ratte}}{\text{produk van die getal tande op dryfratte}}$$

$$6.5 \quad \text{Wringkrag} = \text{krag} \times \text{radius}$$

$$6.6 \quad \text{Wringkrag oorgedra} = \text{ratverhouding} \times \text{insetwringkrag}$$

$$6.7 \quad \text{Module (m)} = \frac{\text{steeksirkeldiameter(SSD)}}{\text{getal tande(T)}}$$

$$6.8 \quad N_1 T_1 = N_2 T_2$$

$$6.9 \quad \text{Steeksirkeldiameter (SSD)} = \frac{\text{steeksirkel(SS)} \times \text{getal tande(T)}}{\pi}$$

$$6.10 \quad \text{Steeksirkeldiameter (SSD)} = m \times T$$

$$6.11 \quad \text{Buitediameter (BD)} = m(T + 2)$$

$$6.12 \quad \text{Buitediameter (BD)} = \text{steeksirkeldiameter (SSD)} + 2 \text{ module}$$

$$6.13 \quad \text{Addendum} = \text{module (m)}$$

$$6.14 \quad \text{Dedendum} = 1,157 m \quad \text{of} \quad \text{Dedendum} = 1,25 m$$

$$6.15 \quad \text{Snydiepte} = 2,157 m \quad \text{of} \quad \text{Snydiepte} = 2,25 m$$

$$6.16 \quad \text{Vry ruimte} = 0,157 m \quad \text{of} \quad \text{Vry ruimte} = 0,25 m$$

$$6.17 \quad \text{Sirkelsteek (SS)} = m \times \pi$$

$$6.18 \quad \text{Senterafstand tussen rat A en rat B} = \frac{(\text{SSD})_A}{2} + \frac{(\text{SSD})_B}{2}$$

7. SKROEFDRADE

$$7.1 \quad \text{Steekdiameter} = \text{buitediameter} - \frac{1}{2} \text{ steek}$$

$$7.2 \quad \text{Steekomtrek} = \pi \times \text{steekdiameter}$$

$$7.3 \quad \text{Styging} = \text{steek} \times \text{getal beginpunte}$$

$$7.4 \quad \text{Skroefdraadhoogte} = 0,866 \times \text{steek}$$

$$7.5 \quad \text{Skroefdraaddiepte} = 0,613 \times \text{steek}$$

8. INDEKSERING

8.1 Cincinnati-verdeelkoptabel vir freesmasjien

Cincinnati-indeksplaat											
Sy 1	24	25	28	30	34	37	38	39	41	42	43
Sy 2	46	47	49	51	53	54	57	58	59	62	66

8.2 Indeksering = $\frac{40}{n}$ (waar n = getal indelings)