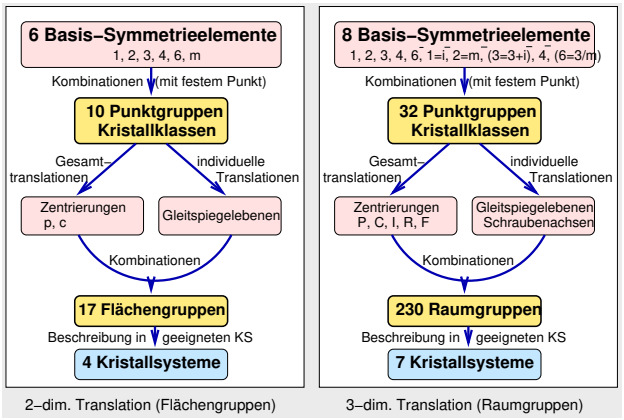
## 2.3. Flächengruppen (Forts.)

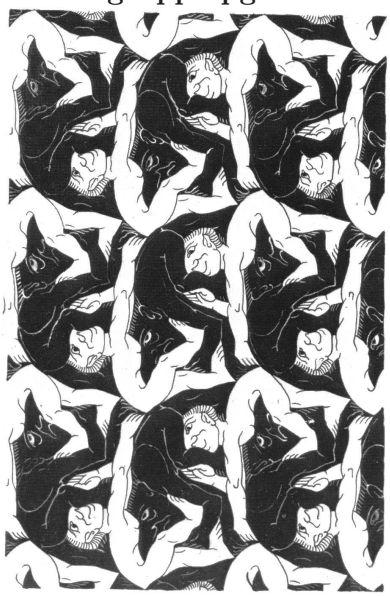



### Tabelle der Flächengruppen

| Punkt-gruppe | Flächen-gruppen | Koordinaten-system |
|---|---|---|
| 1 | p1 | schiefwinklig |
| 2 | p2 | ($a \neq b; \gamma$ beliebig) |
| 1m1 | pm, pg, cm | rechtwinklig |
| 2mm | pmm2, pmg2, pgg2, cmm2 | ($a \neq b; \gamma = 90^o$) |
| 411 | p4 | quadratisch |
| 4mm | p4mm, p4gm | ($a = b; \gamma = 90^o$) |
| 311 | p3 | hexagonal |
| 3m1 | p3m1, p31m | ($a = b; \gamma = 120^o$) |
| 611 | p6 | |
| 6mm | p6mm | |

### Beispiele Flächengruppen

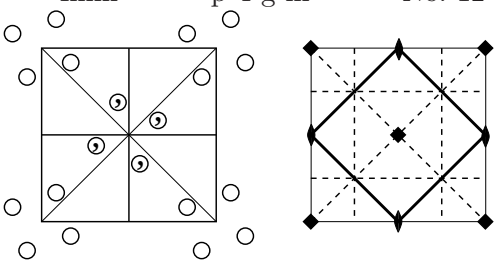
### Flächengruppe pg



### Flächengruppe p4gm

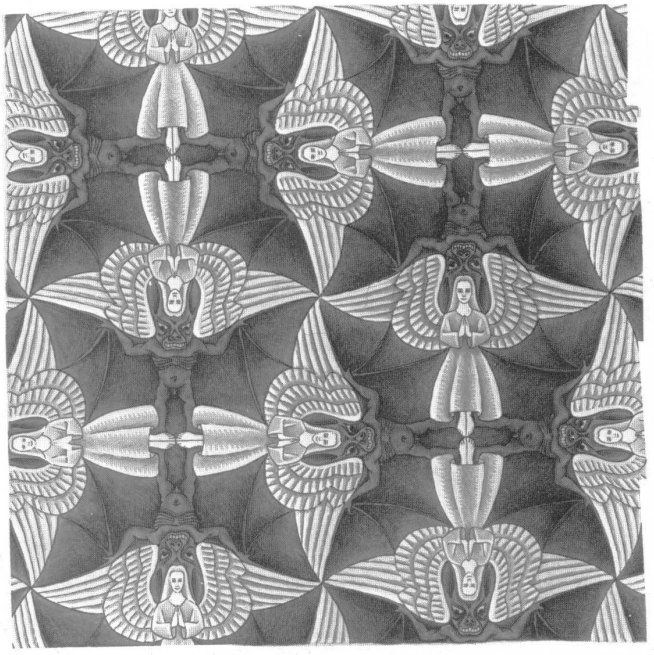
Auszug aus den *International Tables*

Square 4mm p 4 g m No. 12 **p4g**



Origin at 4

| Number of positions, Wyckoff notation, and point symmetry | | | Co-ordinates of equivalent positions | Conditions limiting possible reflections |
|---|---|---|---|---|
| 8 | d | 1 | $x, y; \bar{y}, x; \frac{1}{2}-x, \frac{1}{2}+y; \frac{1}{2}+y, \frac{1}{2}-x;$ $\bar{x}, \bar{y}; y, \bar{x}; \frac{1}{2}+x, \frac{1}{2}-y; \frac{1}{2}-y, \frac{1}{2}+x.$ | General: hk: No conditions h0: h=2n (0k: k=2n) hh: No conditions |
| 4 | c | m | $x, \frac{1}{2}+x; \bar{x}, \frac{1}{2}-x; \frac{1}{2}+x, \bar{x}; \frac{1}{2}-x, x;$ | Special: as above, plus no extra conditions hk: h+k=2n |
| 2 | b | mm | $\frac{1}{2}, 0; 0, \frac{1}{2}$ | hk: h+k=2n |
| 2 | a | 4 | $0, 0; \frac{1}{2}, \frac{1}{2}$ | |



### Beispiel p4gm

M.C. Escher: "Engel und Teufel" (1941)