

2.3. Flächengruppen (Forts.)

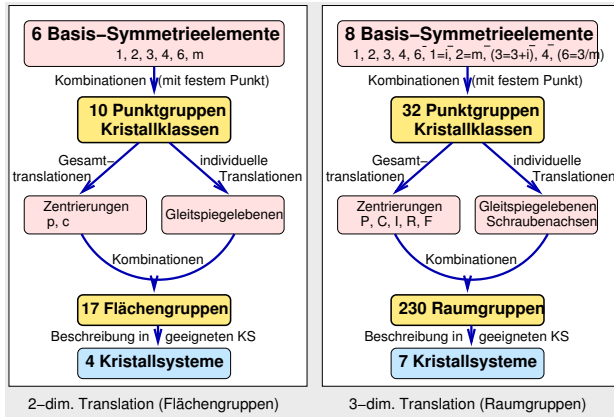


Tabelle der Flächengruppen

Punktgruppe	Flächengruppen	Koordinatensystem
1	p1	schiefwinklig ( $a \neq b; \gamma$ beliebig)
2	p2	
1m1	pm, pg, cm	rechtwinklig ( $a \neq b; \gamma = 90^\circ$ )
2mm	pmm2, pmg2, pgg2, cmm2	
411	p4	quadratisch ( $a = b; \gamma = 90^\circ$ )
4mm	p4mm, p4gm	
311	p3	hexagonal $a = b; \gamma = 120^\circ$
3m1	p3m1, p31m	
611	p6	
6mm	p6mm	

Beispiele Flächengruppen

Flächengruppe pg



Flächengruppe p4gm

Auszug aus den *International Tables*

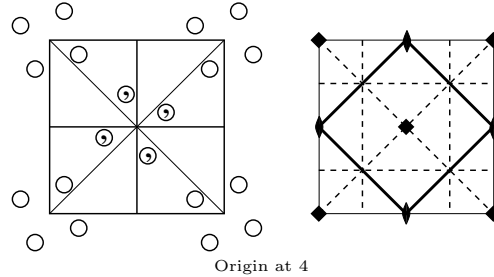
Square

4mm

p 4 g m

No. 12

p4g



Origin at 4

Number of positions, Wyckoff notation, and point symmetry

8 d

1

$x, y; \bar{y}, \bar{x}; \frac{1}{2} - x, \frac{1}{2} + y; \frac{1}{2} - y, \frac{1}{2} - x; \bar{x}, \bar{y}; \bar{y}, x; \frac{1}{2} + y, \frac{1}{2} - y; \frac{1}{2} + y, \frac{1}{2} - x.$

$x, \frac{1}{2} + x; \bar{x}, \frac{1}{2} - x; \frac{1}{2} + x, \bar{x}; \frac{1}{2} - x, x; \frac{1}{2}, 0; 0, \frac{1}{2}; 0, 0; \frac{1}{2}, \frac{1}{2}$

Co-ordinates of equivalent positions

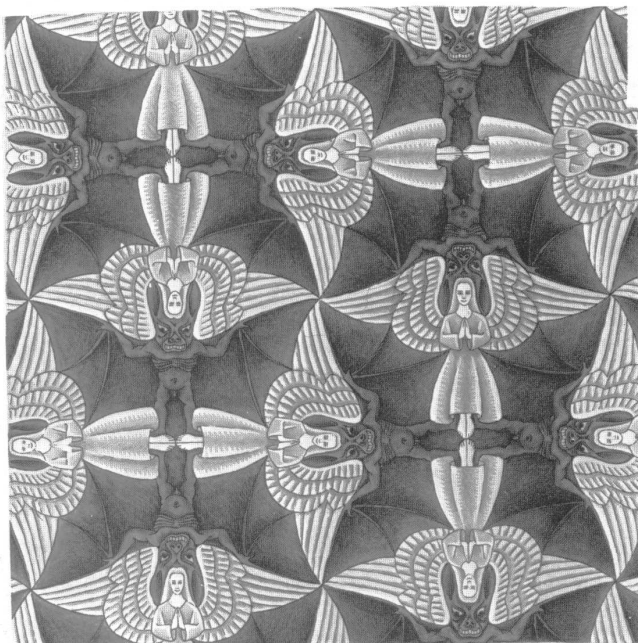
Conditions limiting possible reflections

General:

hk: No conditions  
h0:  $h=2n$  ( $0k: k=2n$ )  
hh: No conditions

Special: as above, plus no extra conditions

hk:  $h+k=2n$   
hk:  $h+k=2n$



Beispiel p4gm

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