

4.1. Flächengruppen (Forts.)

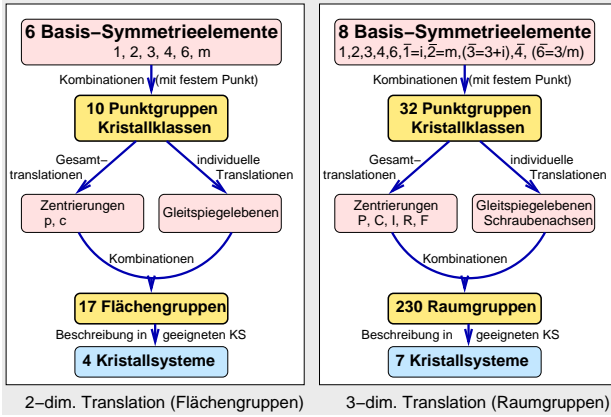


Tabelle der Flächengruppen

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*

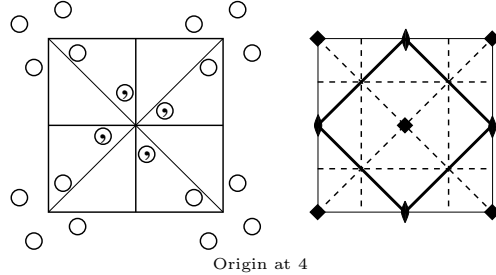
Square

4mm

p 4 g m

No. 12

p4g



Number of positions, Wyckoff notation, and point symmetry

8 d

1

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

Conditions limiting possible reflections

General:

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

4 c

b

2 b

2 a

m

mm

4

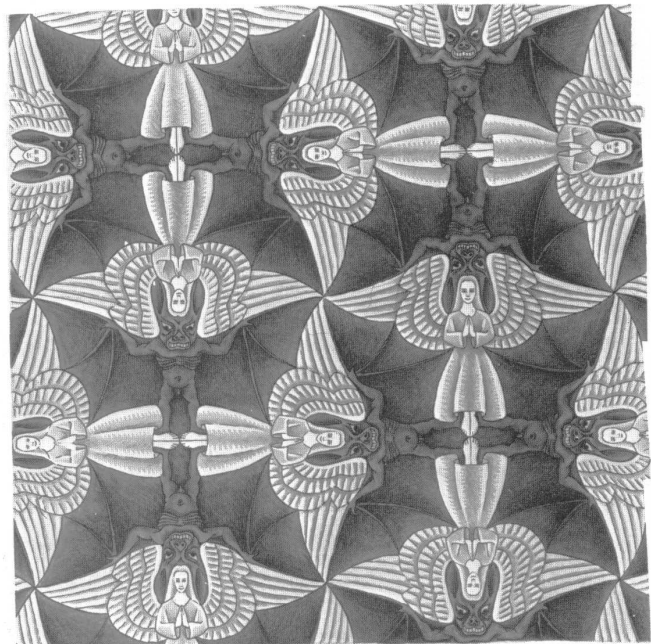
$x, \frac{1}{2} + x; \bar{x}, \frac{1}{2} - x; \frac{1}{2} + x, \bar{x}; \frac{1}{2} - x, x;$
 $\frac{1}{2}, 0; 0, \frac{1}{2}$
 $0, 0; \frac{1}{2}, \frac{1}{2}$

Special: as above, plus

no extra conditions

hk: $h+k=2n$

hh: $h+k=2n$



Beispiel p4gm

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