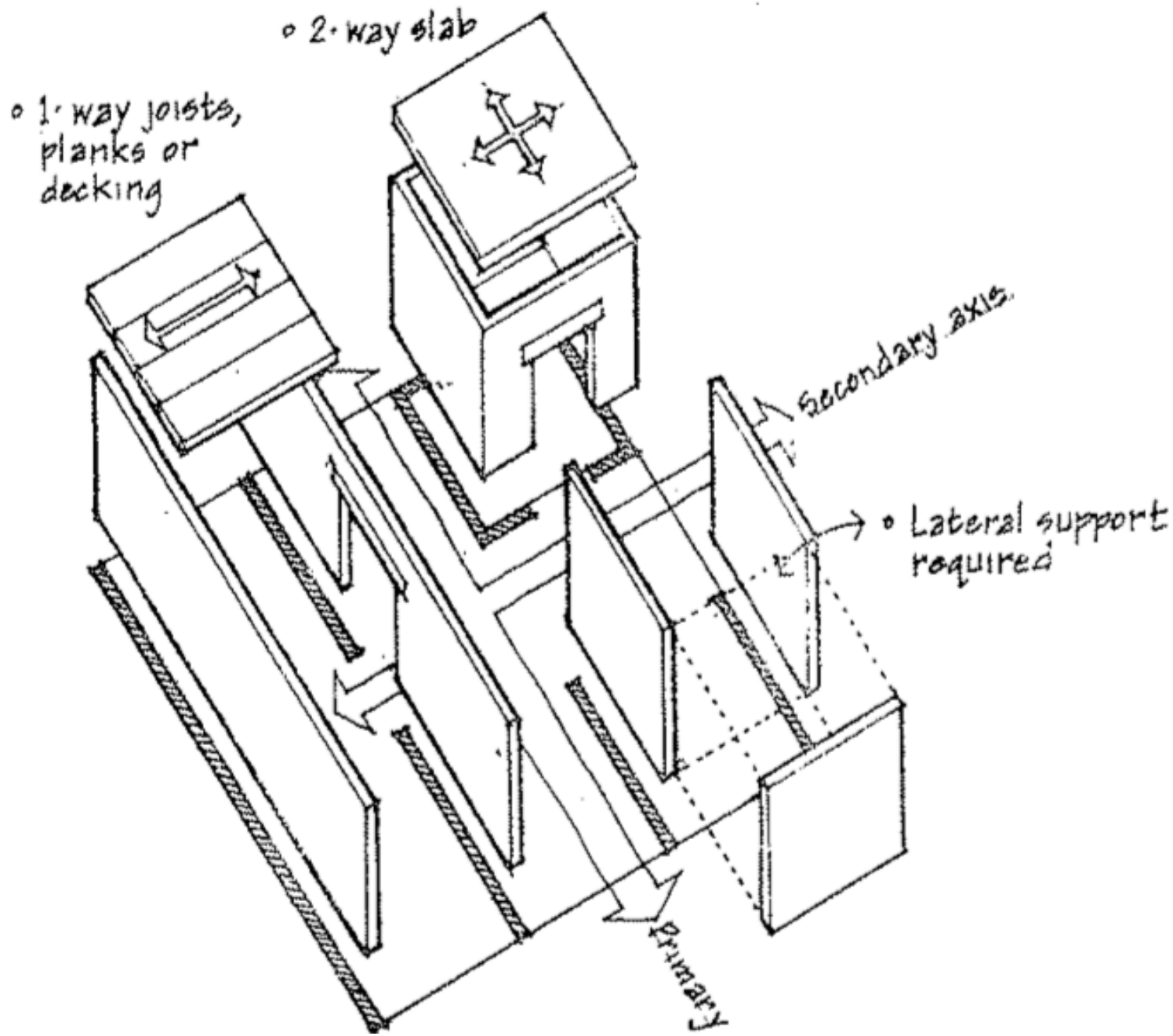


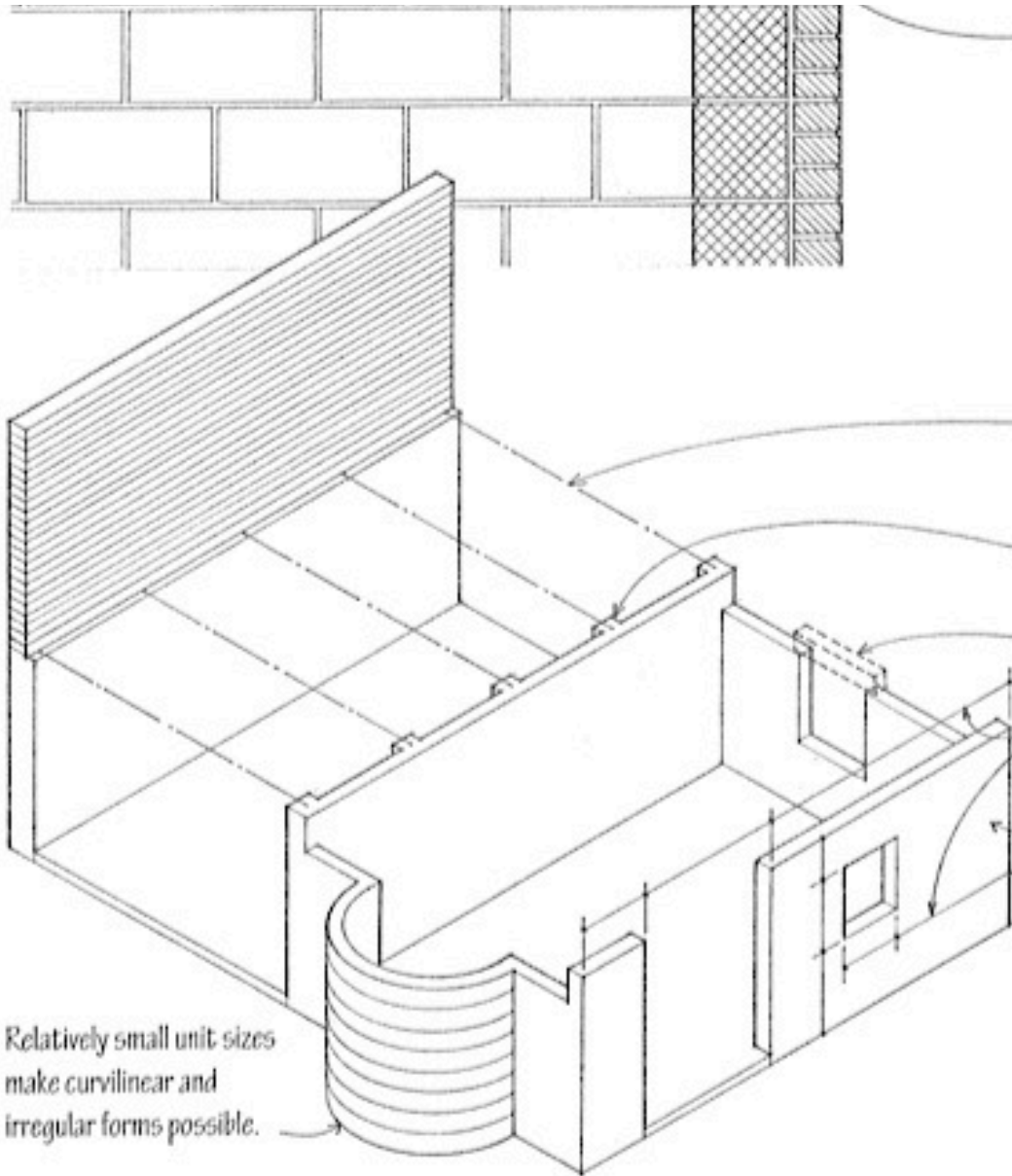
PERENCANAAN TEKNOLOGI & SISTEM BANGUNAN (PTSB) 03



OUTLINE

BUILDING SYSTEMS

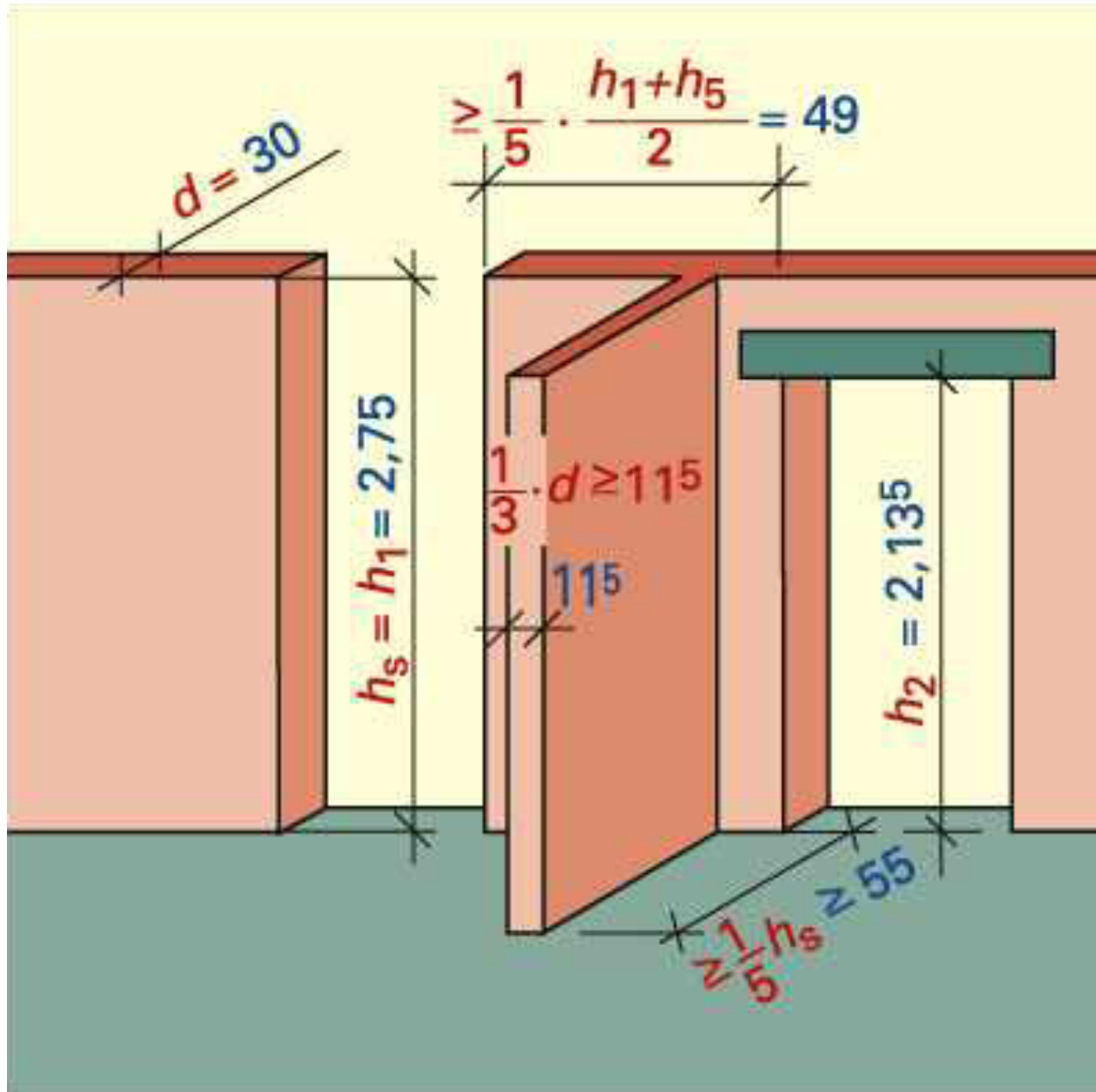
Wall construction



OUTLINE

**BUILDING
SYSTEMS**

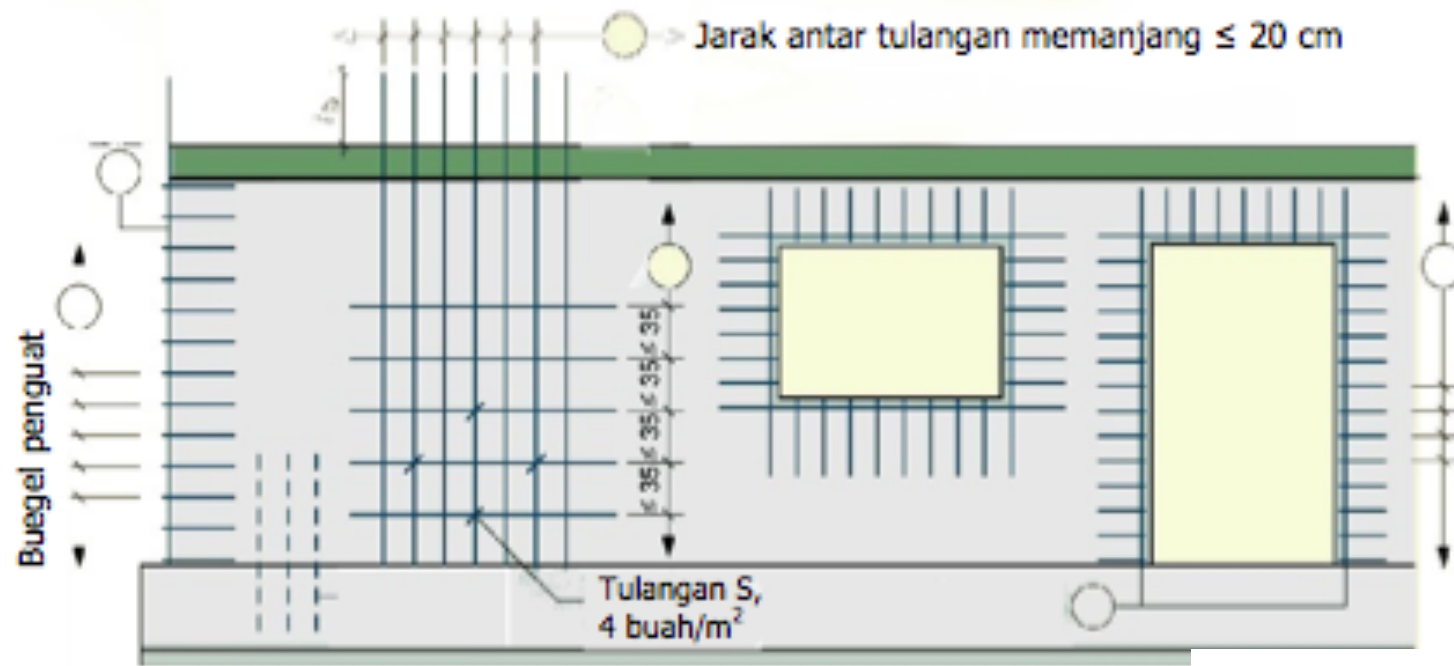
Wall construction



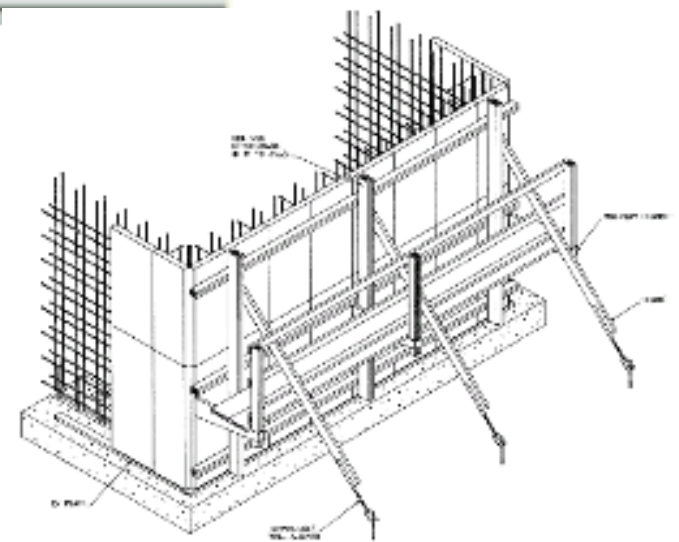
OUTLINE

**BUILDING
SYSTEMS**

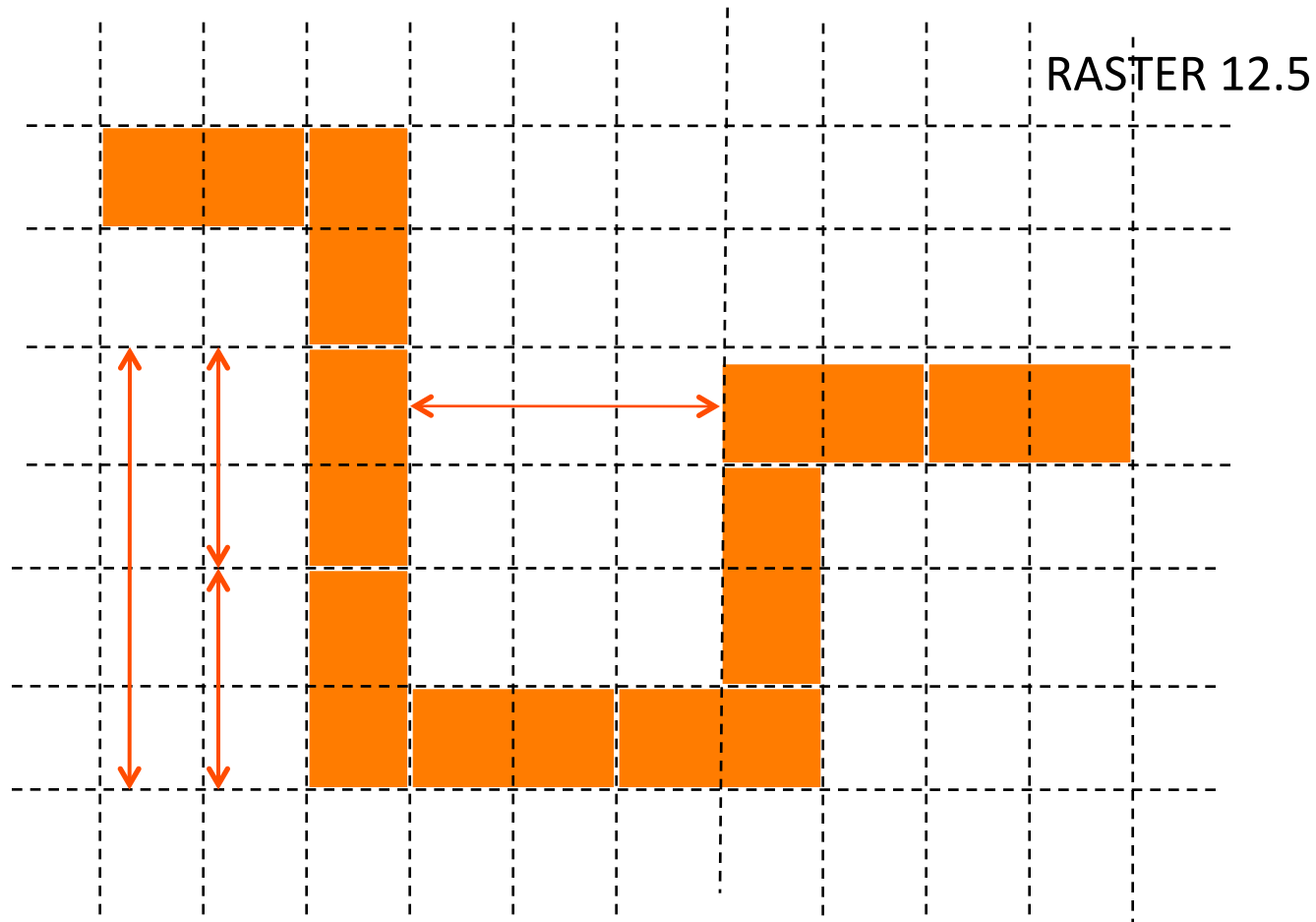
Wall construction



Sumber: Nestle, dkk., 2003, h. 334; Levy, 2001, h. 22



Think about OKTAMETRICS



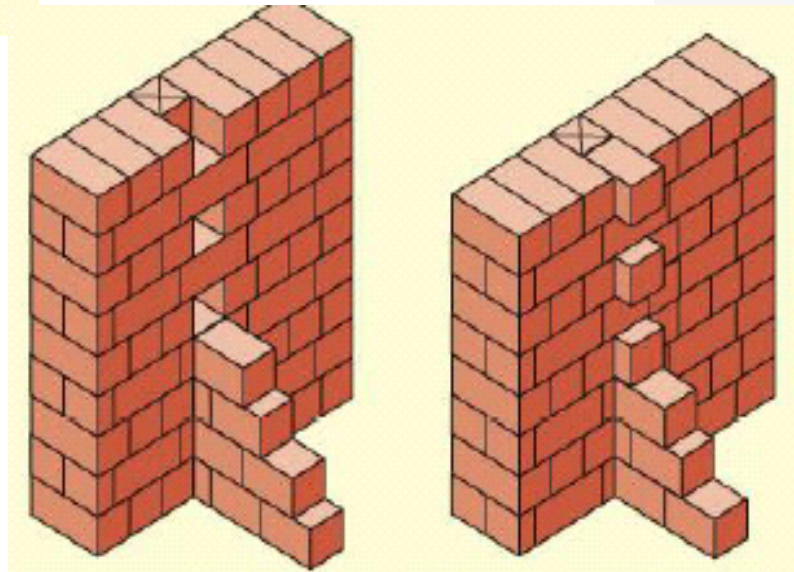
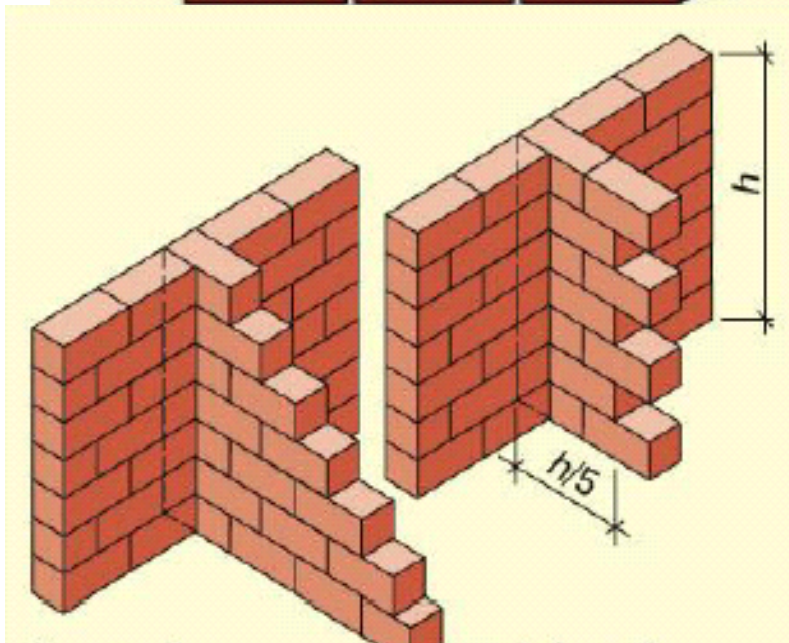
Source: Brick Development Association, *Brick Bulletin*, Summer 2000

OUTLINE

**BUILDING
SYSTEMS**

Wall construction

Think about **OKTAMETRICS**



OUTLINE

**BUILDING
SYSTEMS**

Wall construction

Think about **OKTAMETRICS**



14 x 14 x 14 cm



29 x 14 x 14 cm

Bataton U (*hollow brick*)

OUTLINE

**BUILDING
SYSTEMS**

Wall construction

Think about **OKTAMETRICS**



14 x 14 x 14 cm



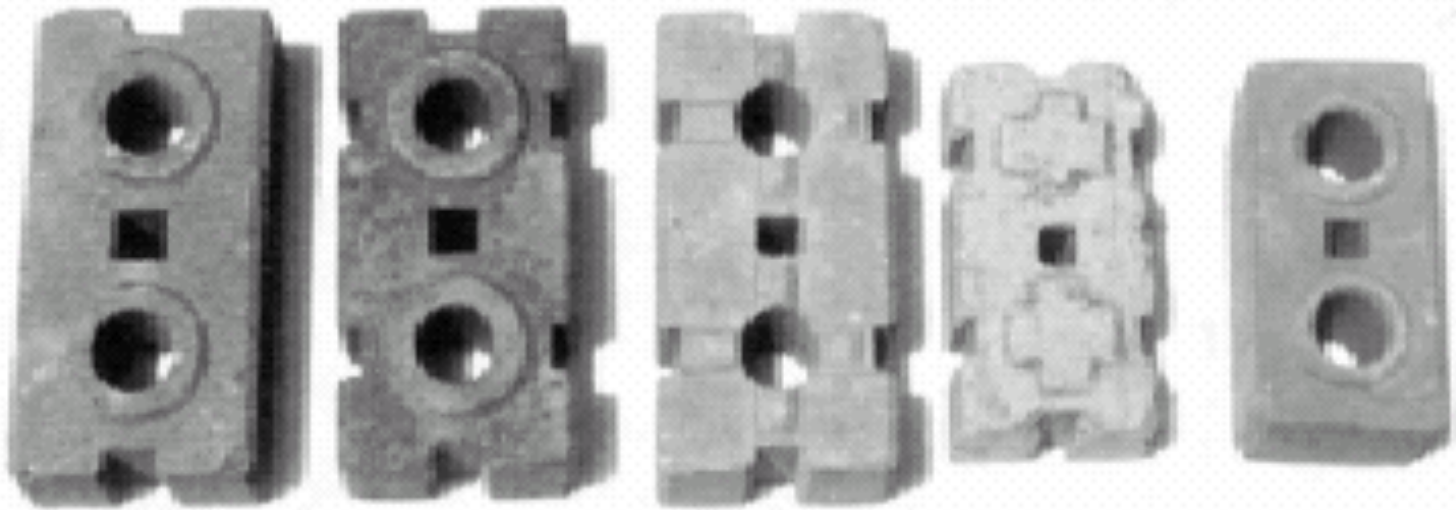
29 x 14 x 14 cm

Bataton H (*hollow brick*)

OUTLINE

**BUILDING
SYSTEMS**

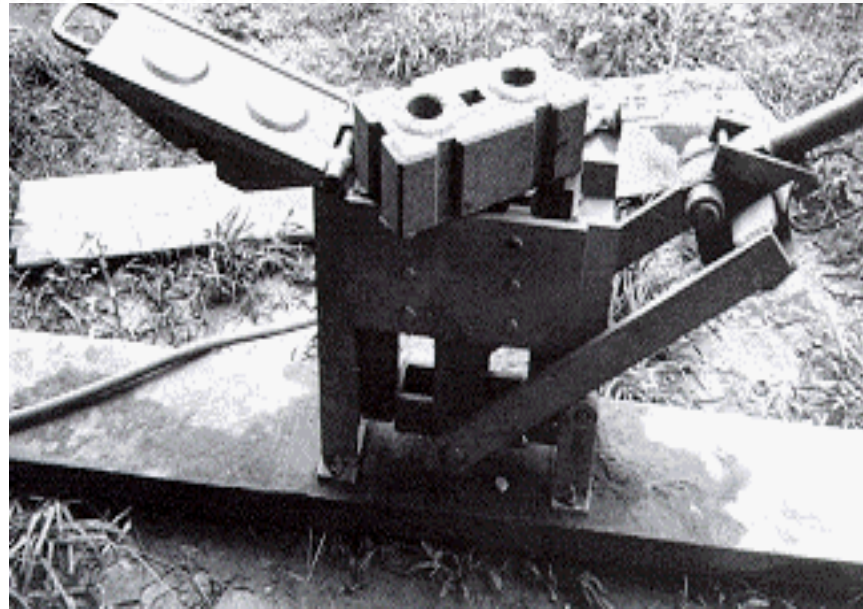
Wall construction



OUTLINE

**BUILDING
SYSTEMS**

Wall construction



◦ layered
1-way
system

◦ 2-way
slab

Lateral stability may be
provided by
◦ diagonal bracing
◦ rigid frames or
◦ shear walls

◦ spaces may be
enclosed with
non-load-
bearing walls
or partitions

OUTLINE
**BUILDING
SYSTEMS**
Wall construction

Kolom beton bertulang (SNI 03-2847-2002)

- jumlah minimum tulangan memanjang untuk kolom persegi adalah 4 buah (satu untuk setiap sudut), dan minimum 6 buah tulangan memanjang untuk kolom bulat.
- Jarak bersih minimum antar muka tulangan memanjang kolom adalah 25 mm, dan disarankan 40 mm.
- Jarak maksimum antar tulangan memanjang adalah 150 mm.
- Jarak maksimum sengkang adalah nilai terkecil dari setengah tinggi efektif penampang ($d/2$), atau 250 mm untuk tulangan polos, dan 300 mm untuk tulangan ulir.

OUTLINE

**BUILDING
SYSTEMS**

Wall construction

Kolom beton bertulang

Beberapa hal yang harus diperhatikan dalam desain kolom beton bertulang (struktural) adalah:

- a) Perbandingan ukuran sisi kolom $b/h \geq 0,4$.
- b) Dimensi minimum ukuran sisi kolom 200 mm.
- c) Diameter tulangan kolom minimum 12 mm.
- d) Diameter sengkang minimum 8 mm.

Untuk bangunan sederhana sengkang/beugel minimum $\varnothing 6-125$, atau $\varnothing 8-150$.

- e) Luas tulangan memanjang untuk kolom, minimum 1% dan maksimum 6%.

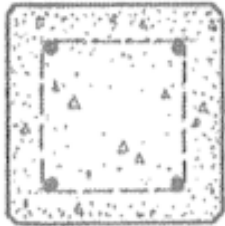
OUTLINE

**BUILDING
SYSTEMS**

Wall construction

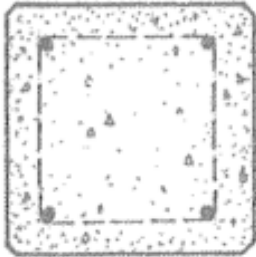
Incast

Precast



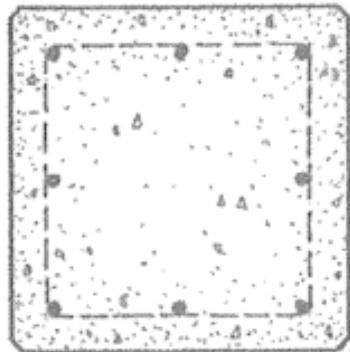
30.5 x 30.5 cm
can supports **185 m²**

25.5 x 25.5 cm
can supports **185 m²**



40.5 x 40.5 cm
can supports **280 m²**

30.5 x 30.5 cm
can supports **255 m²**



51.0 x 51.0 cm
can supports **372 m²**

40.5 x 40.5 cm
can supports **418 m²**

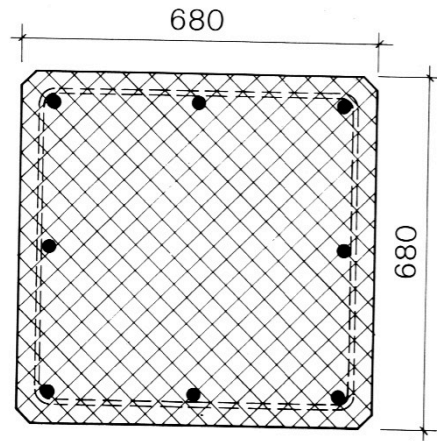
OUTLINE

**BUILDING
SYSTEMS**

Wall construction

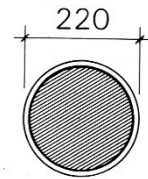
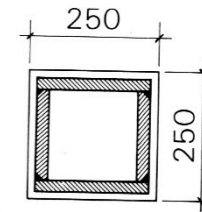
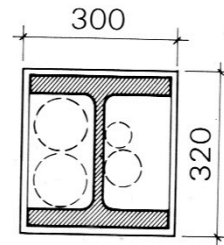
Für 4000 kN
Pour 4000 kN

Beton
B 35/25
 $\mu = 0,6 \%$

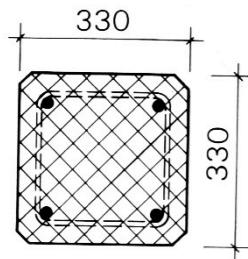


Für 4000 kN:
Stahlquerschnitte Fe 510 (F90)

Pour 4000 kN:
Sections d'acier Fe 510 (F90)

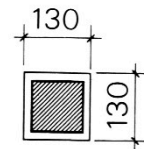
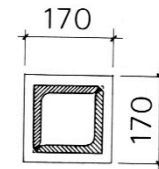
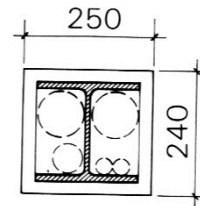


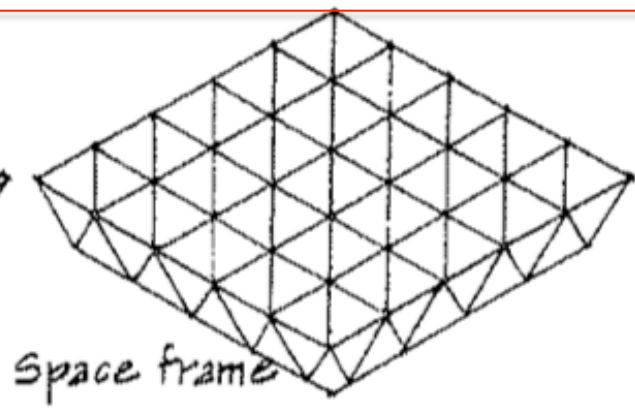
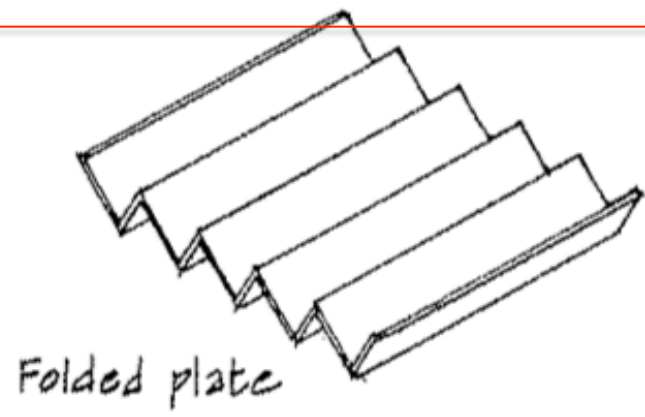
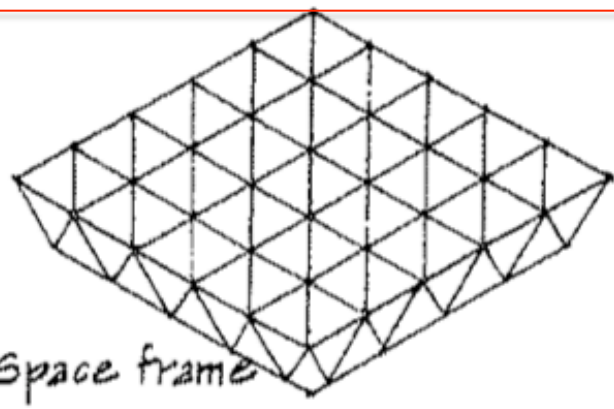
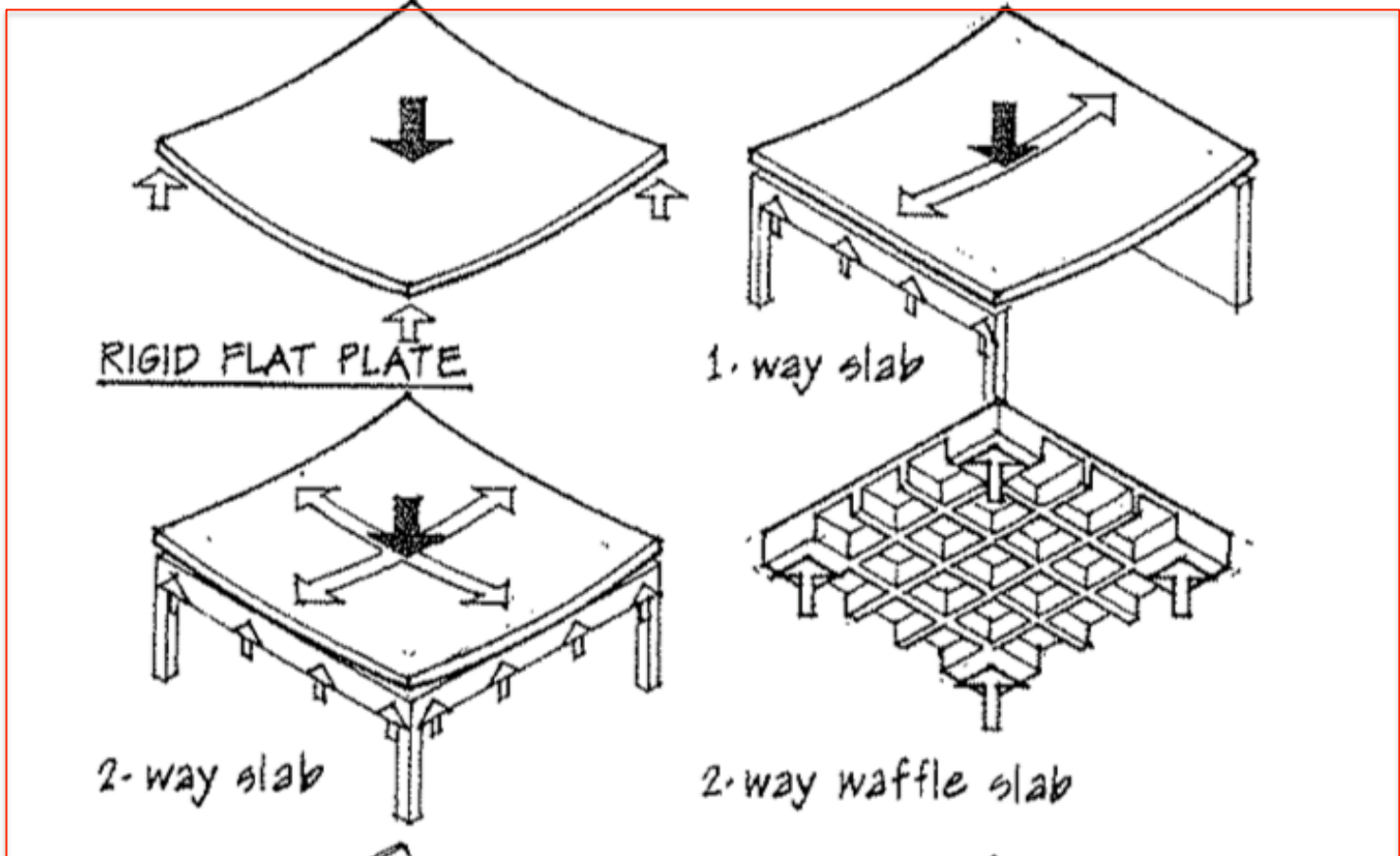
Für 800 kN
Pour 800 kN



Für 800 kN:
Stahlquerschnitte Fe 510 (F90)

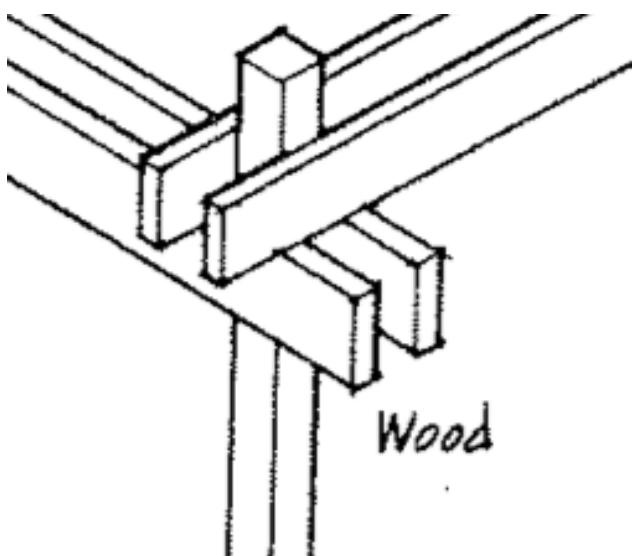
Pour 800 kN:
Sections d'acier Fe 510 (F90)



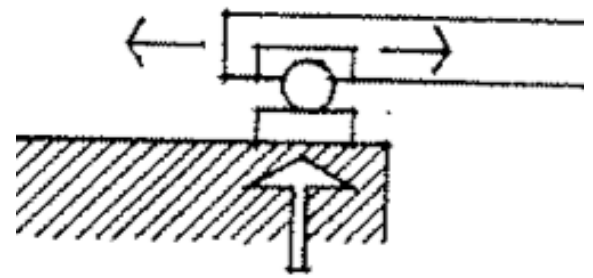
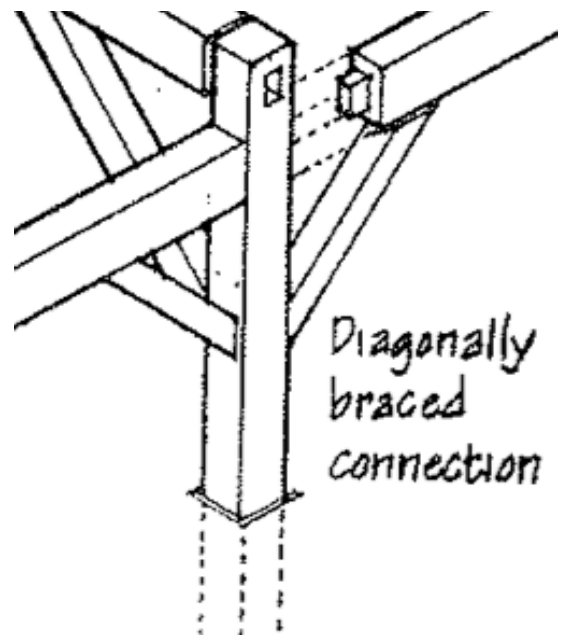
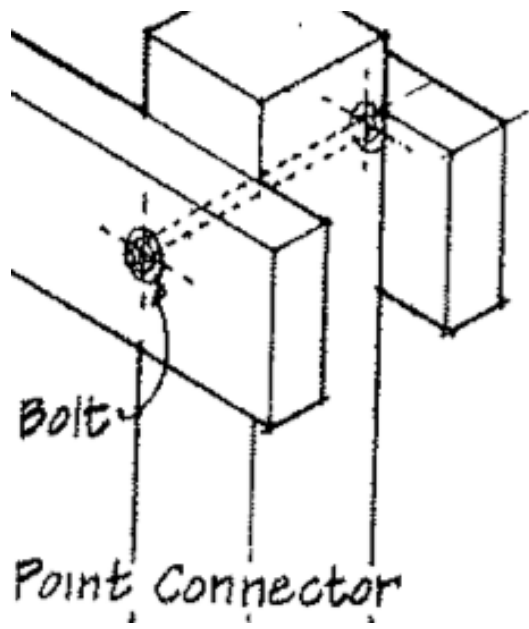
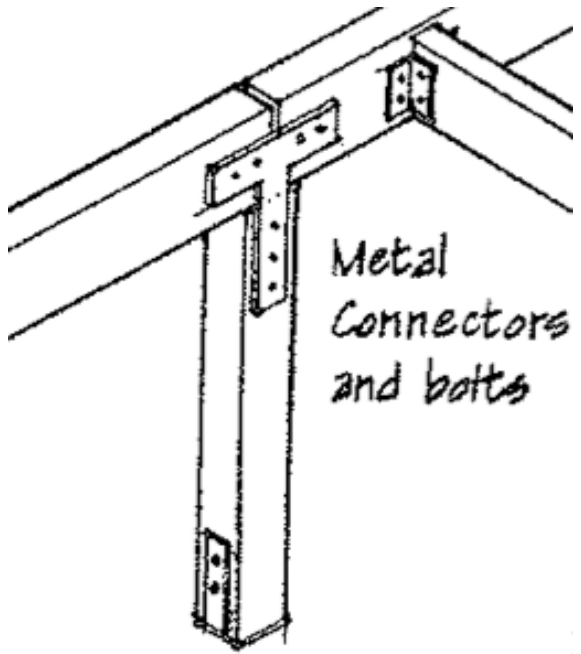


OUTLINE
BUILDING SYSTEMS
 Wall construction

Joints & Connections

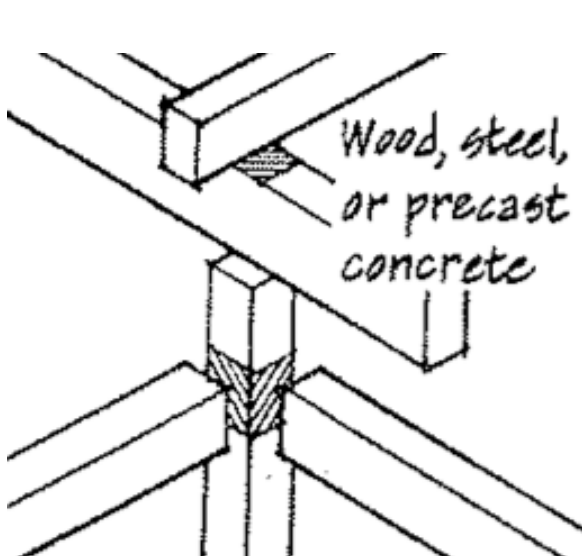


Overlapping Joint

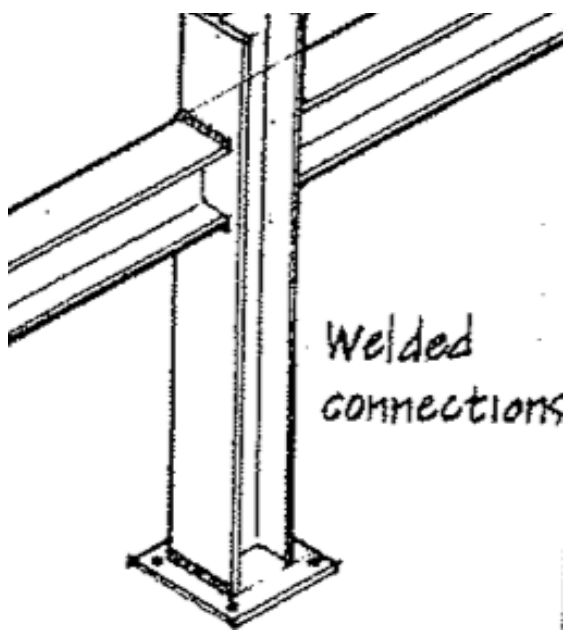
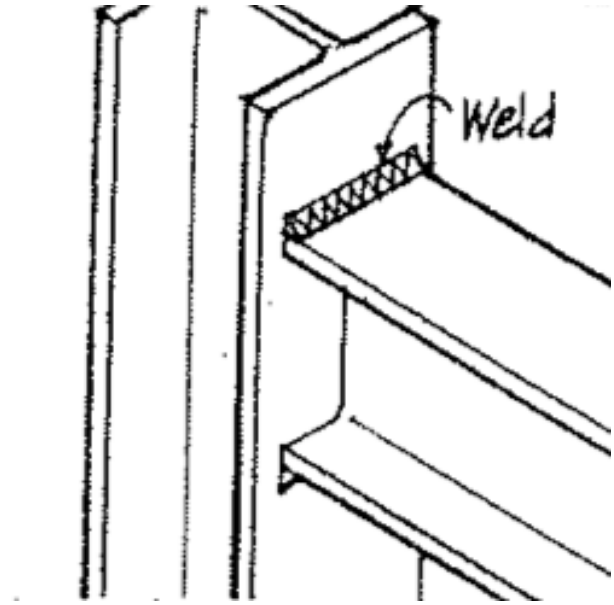
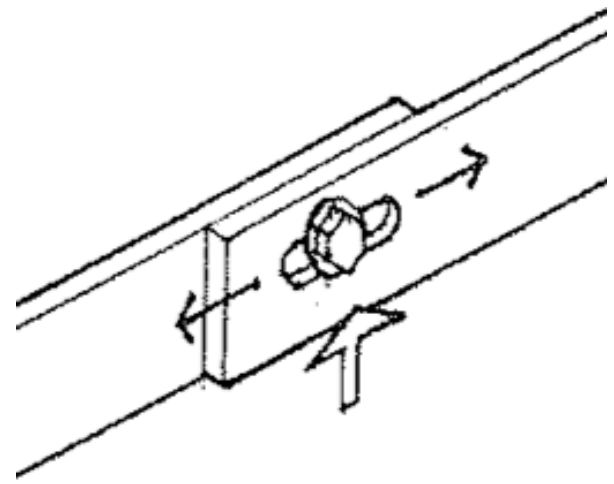
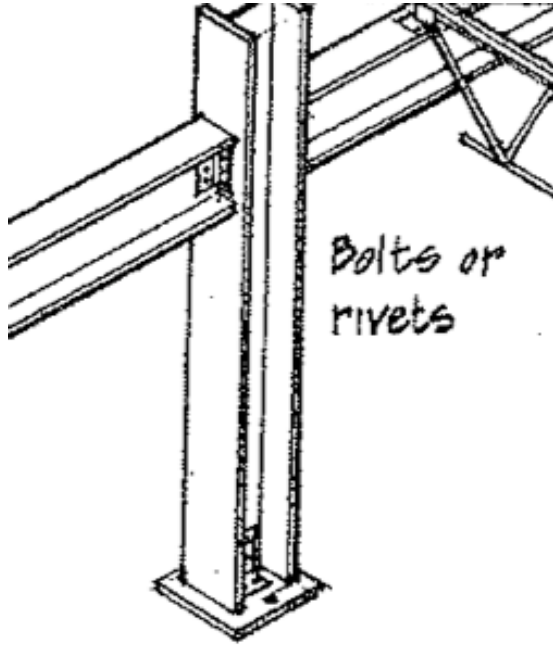


Wood

Joints & Connections

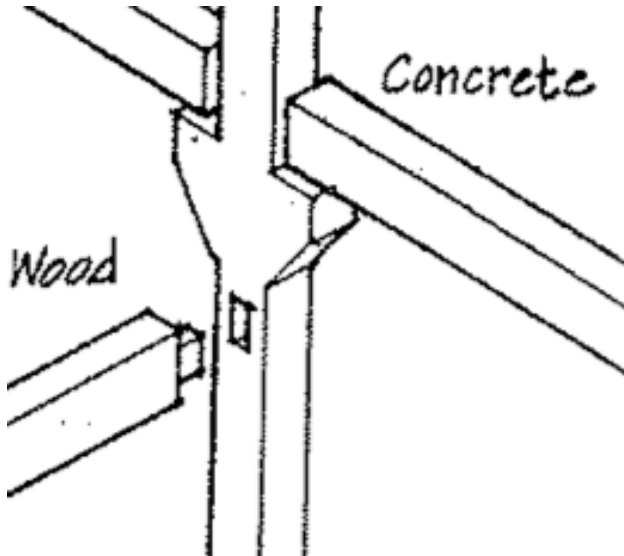


Butt Joint

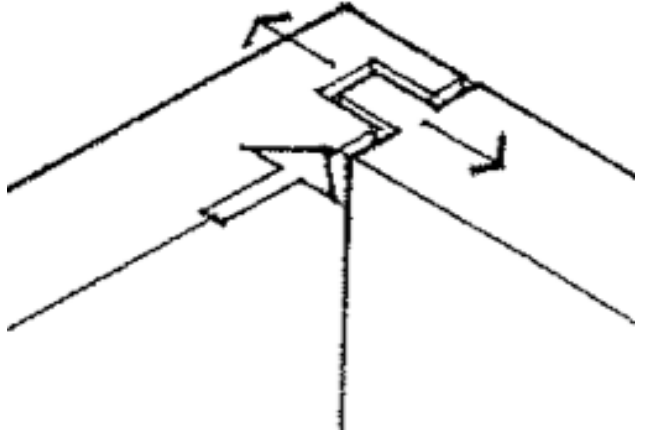
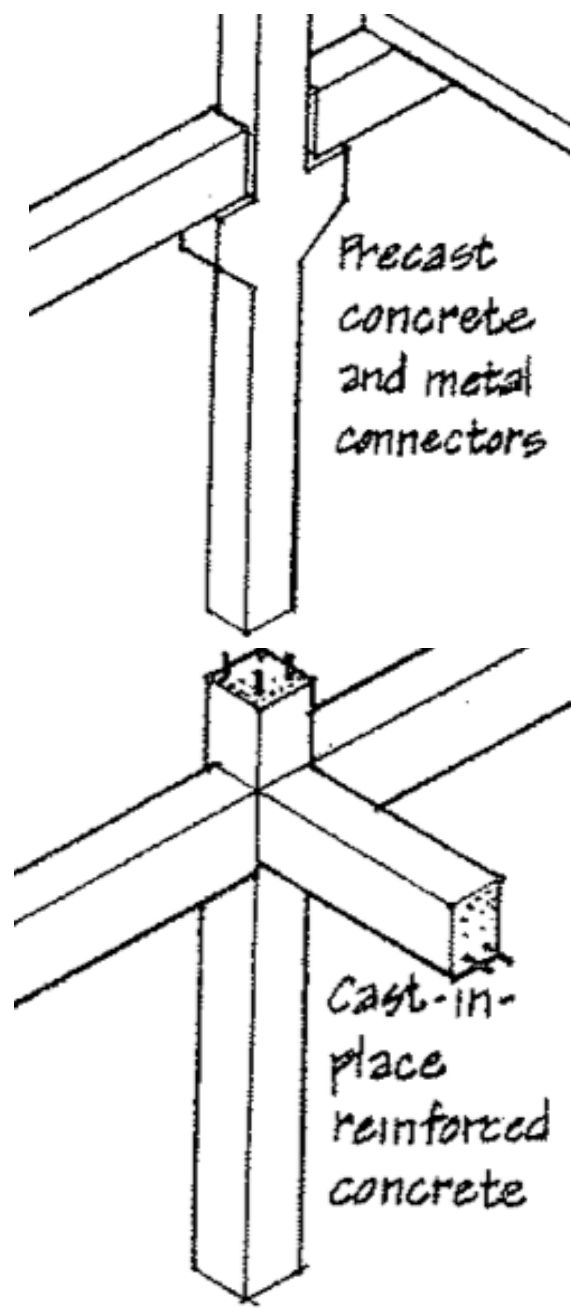


Steel

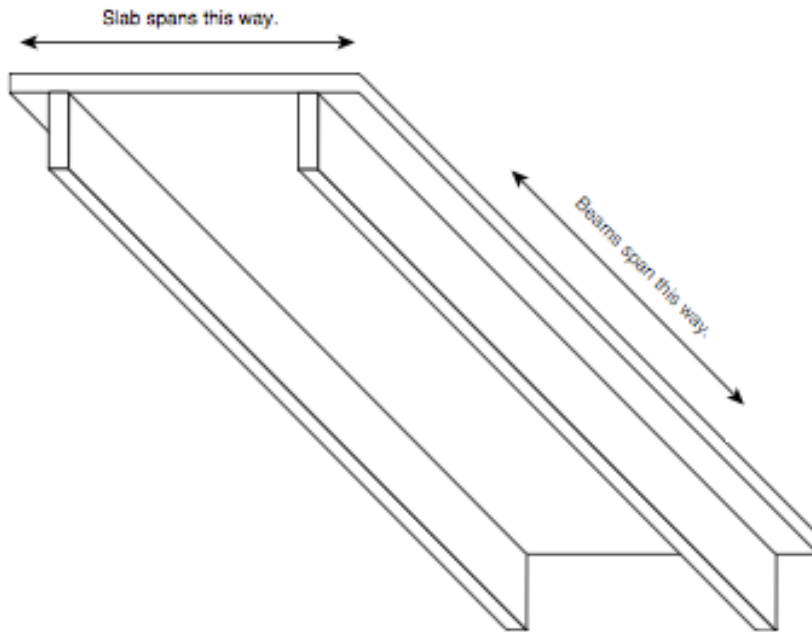
Joints & Connections



Molded & Shaped Joint

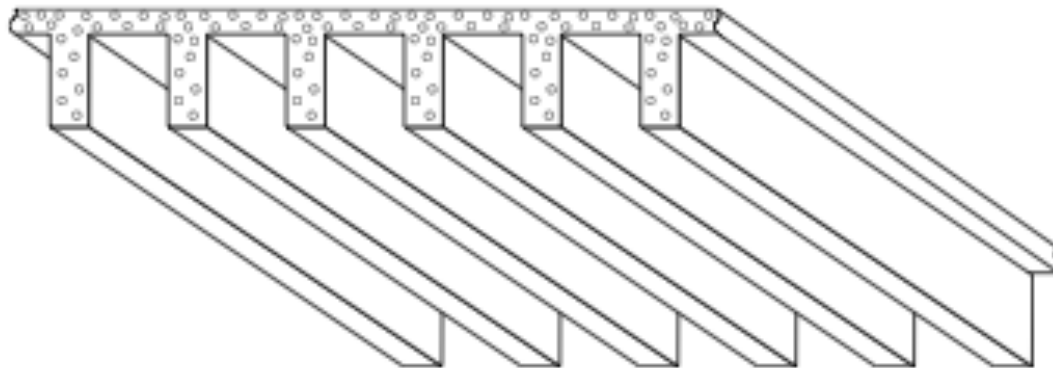


Concrete



Maksimum 3 m

Figure 6.1 One-way suspended slab on beams



Maksimum 14 m
Ukuran joist 15 – 50 cm
Jarak antar joist 60 cm

Figure 6.2 Suspended slab with integral joists

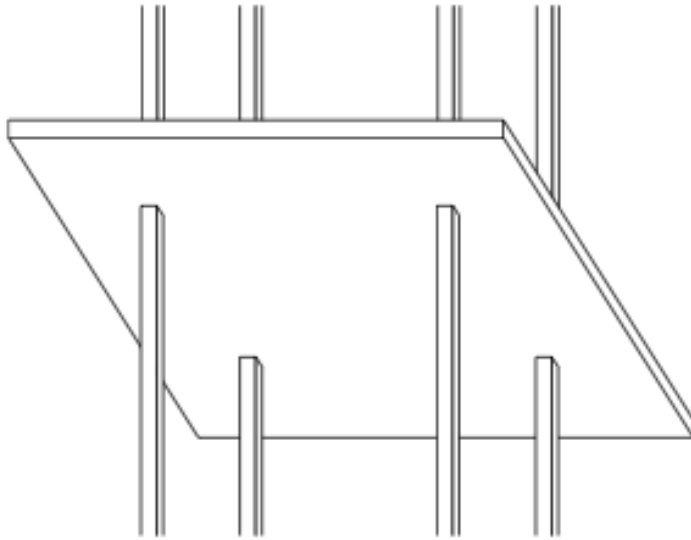


Figure 6.5 A two-way slab – flat plate

Maksimum 9 m

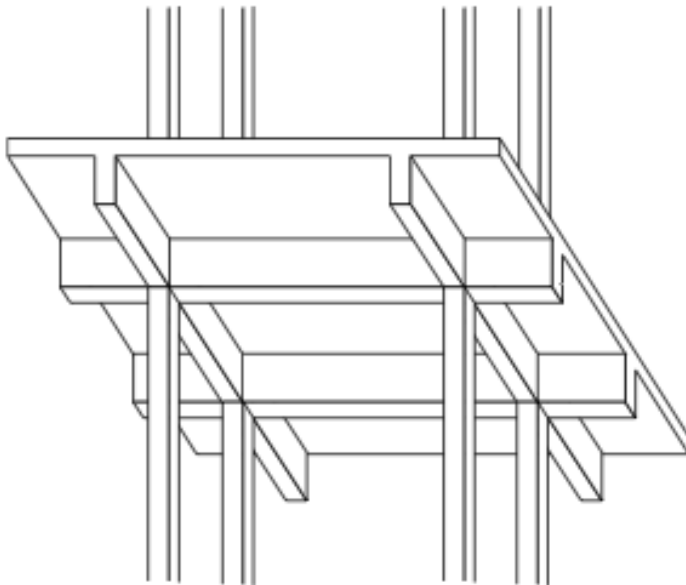


Figure 6.6 A two-way slab on beams

Maksimum 14 m
Ukuran joist 15 – 50 cm
Jarak antar joist 60 cm



OUTLINE

**BUILDING
SYSTEMS**

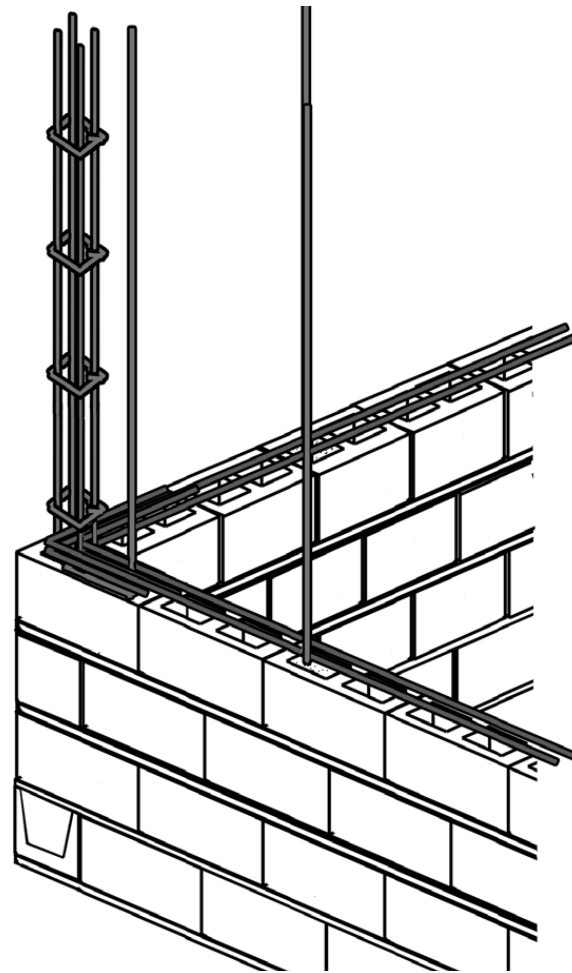
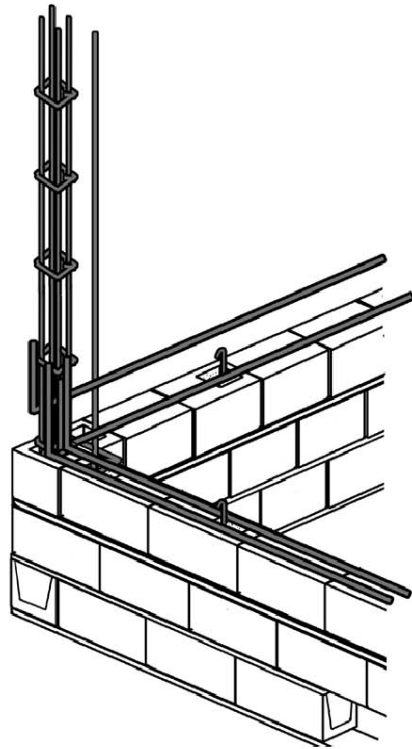
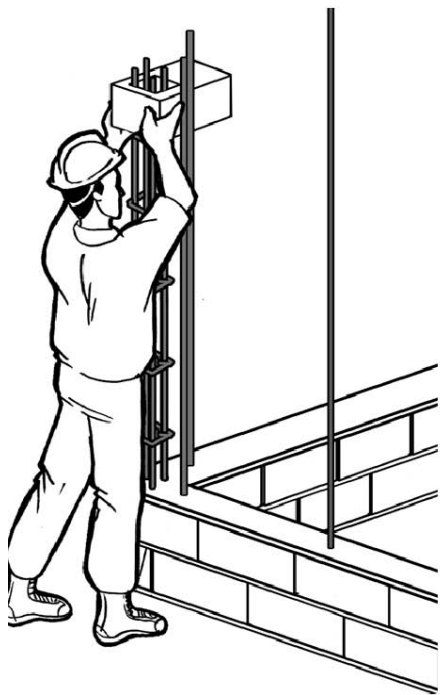
Wall construction



OUTLINE

**BUILDING
SYSTEMS**

Wall construction



OUTLINE

**BUILDING
SYSTEMS**

Wall construction

Fundamental CONCRETE

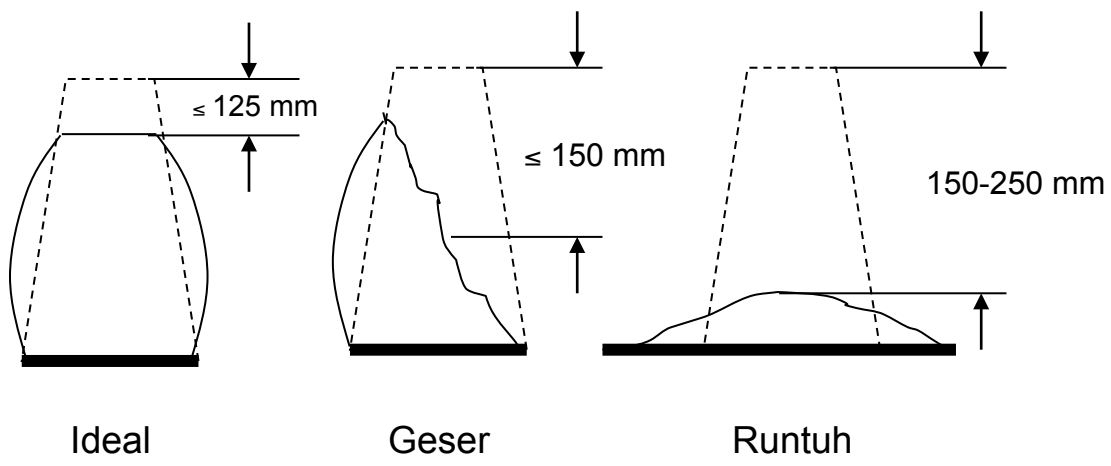
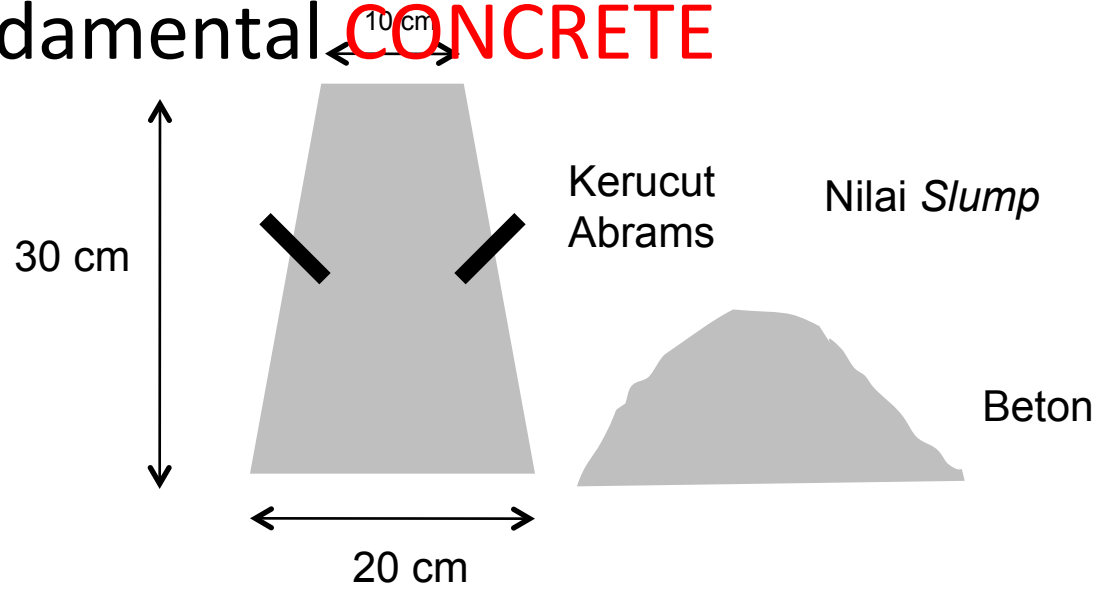


OUTLINE

**BUILDING
SYSTEMS**

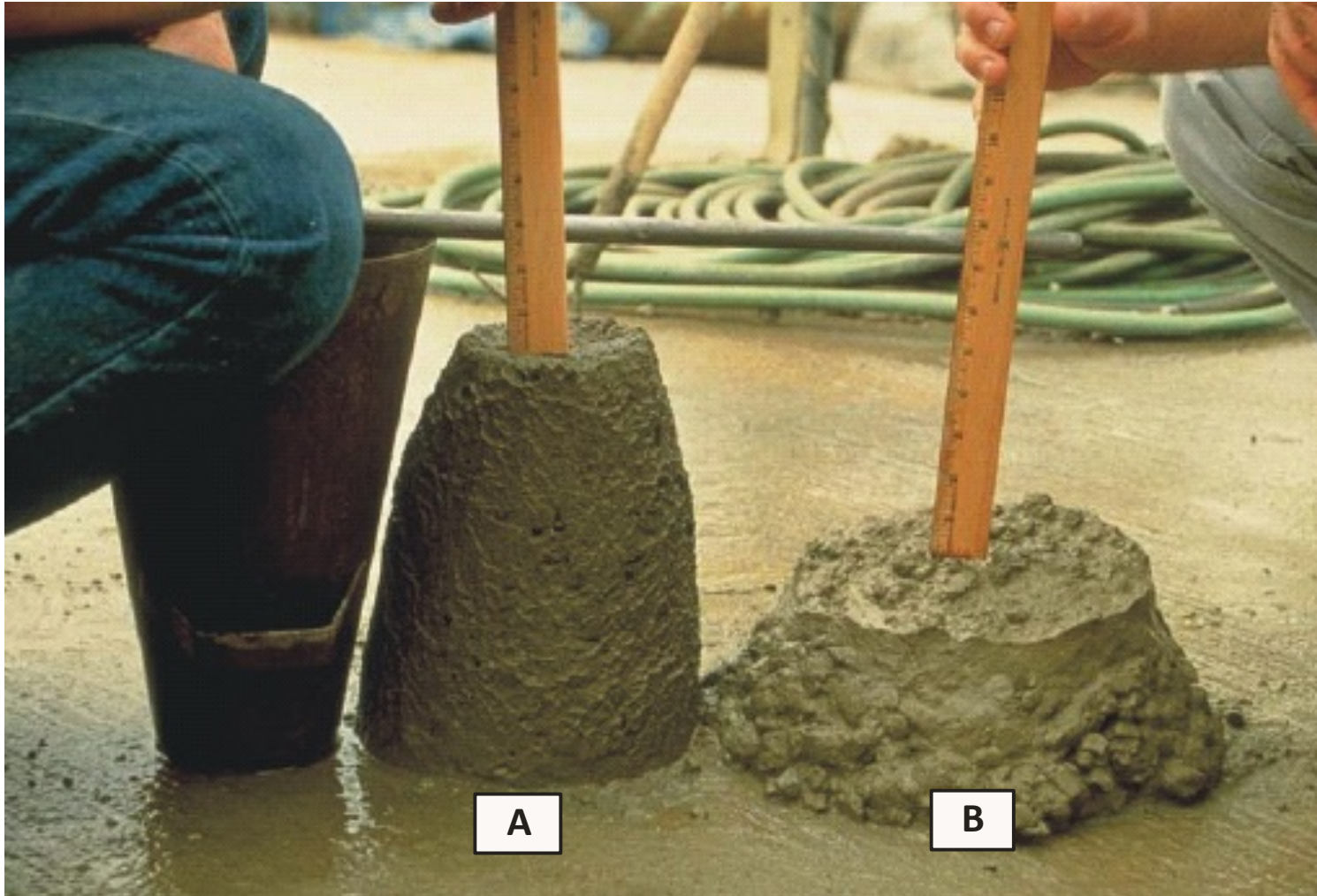
Wall construction

Fundamental CONCRETE



OUTLINE
BUILDING SYSTEMS
Wall construction

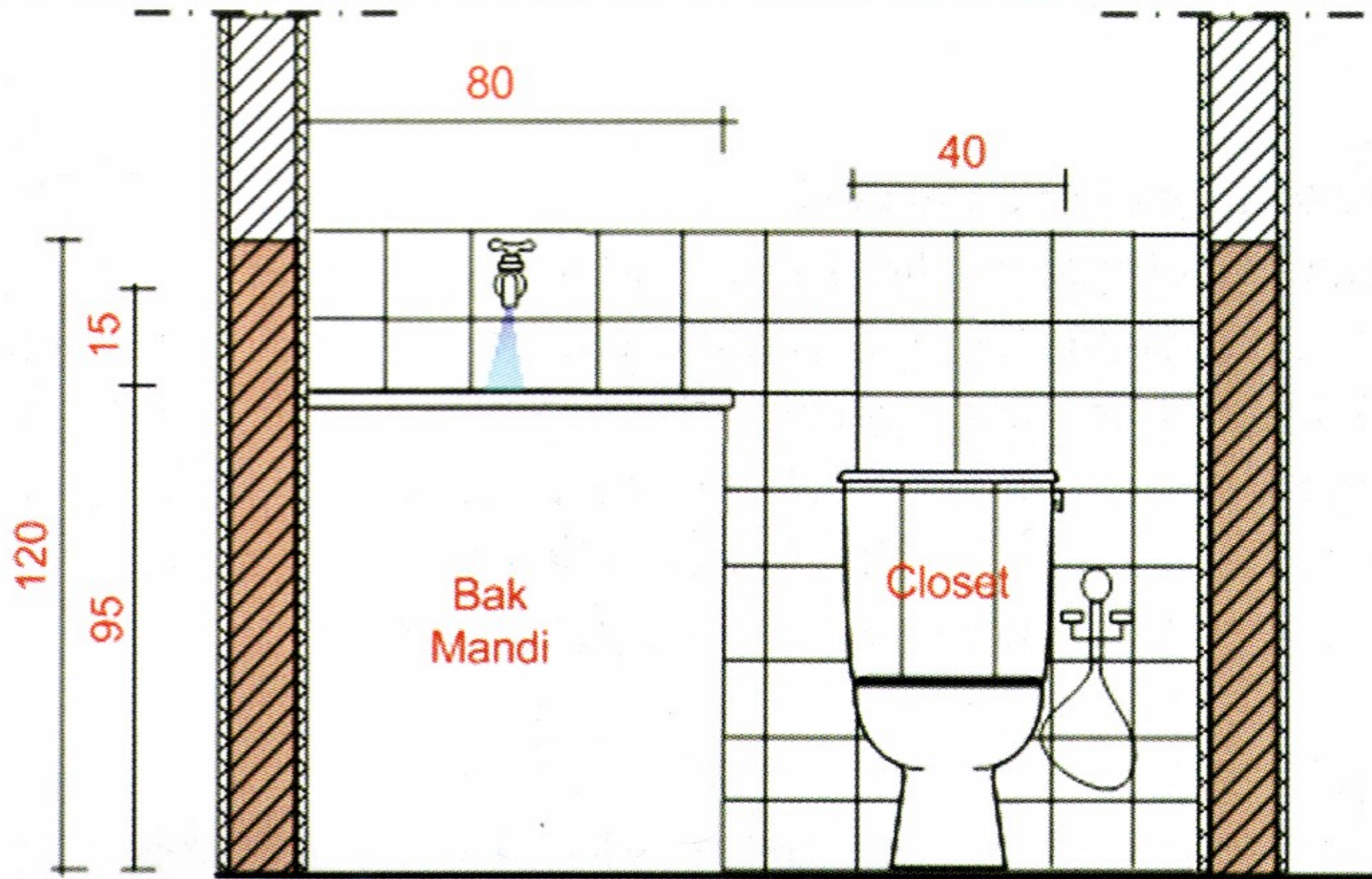
Fundamental CONCRETE



OUTLINE

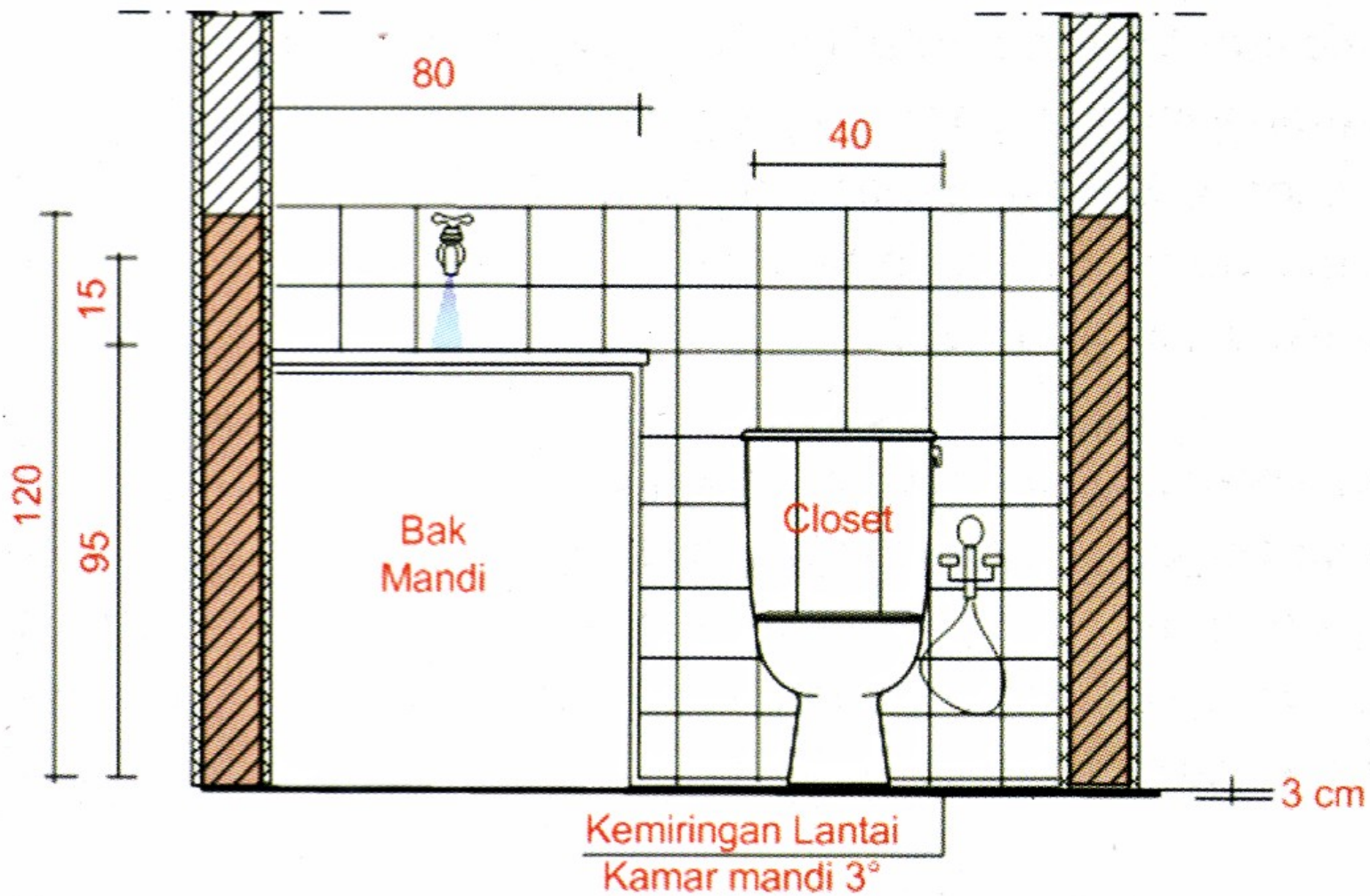
**BUILDING
SYSTEMS**

Wall construction



OUTLINE

Utility

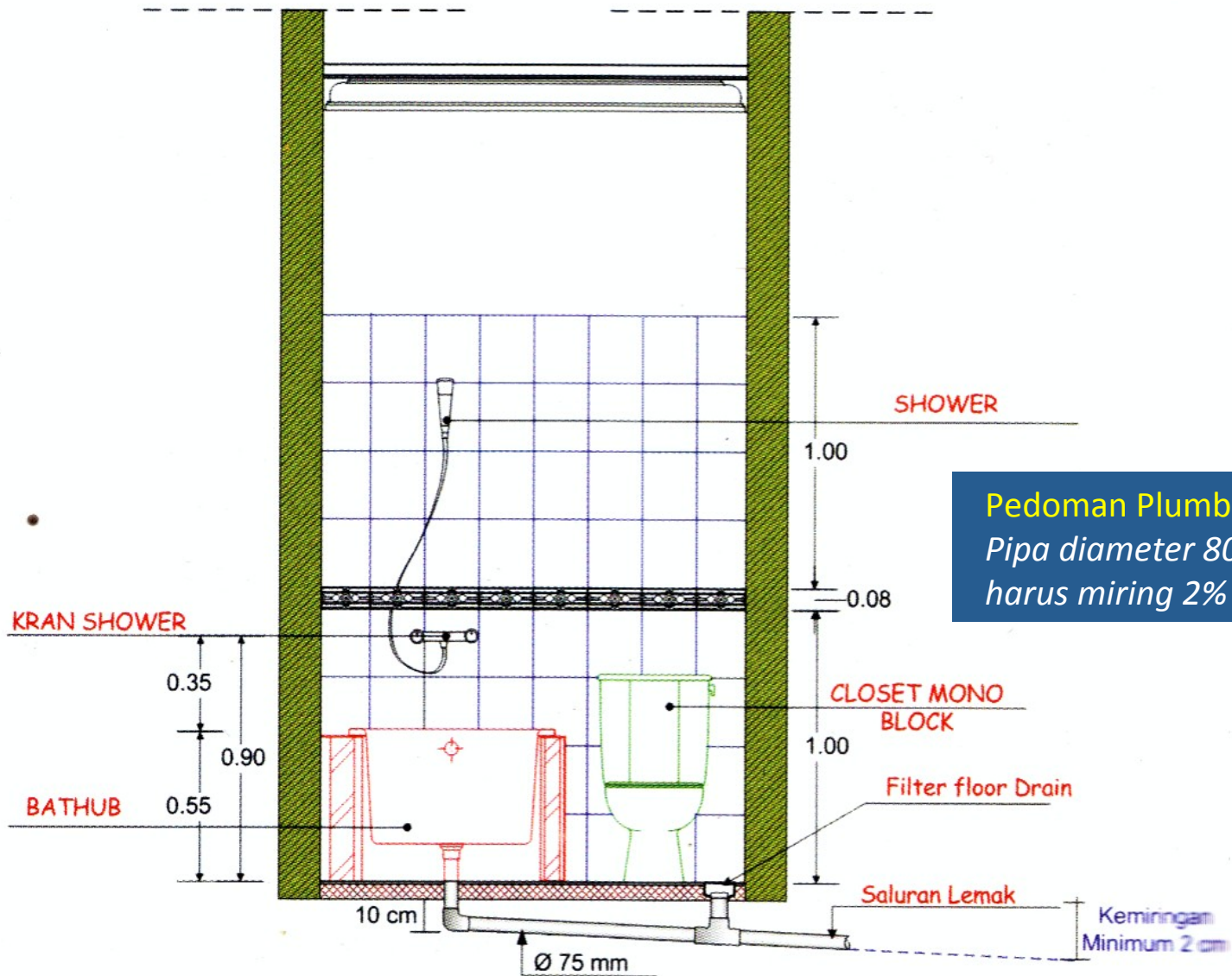


OUTLINE

Utility

OUTLINE

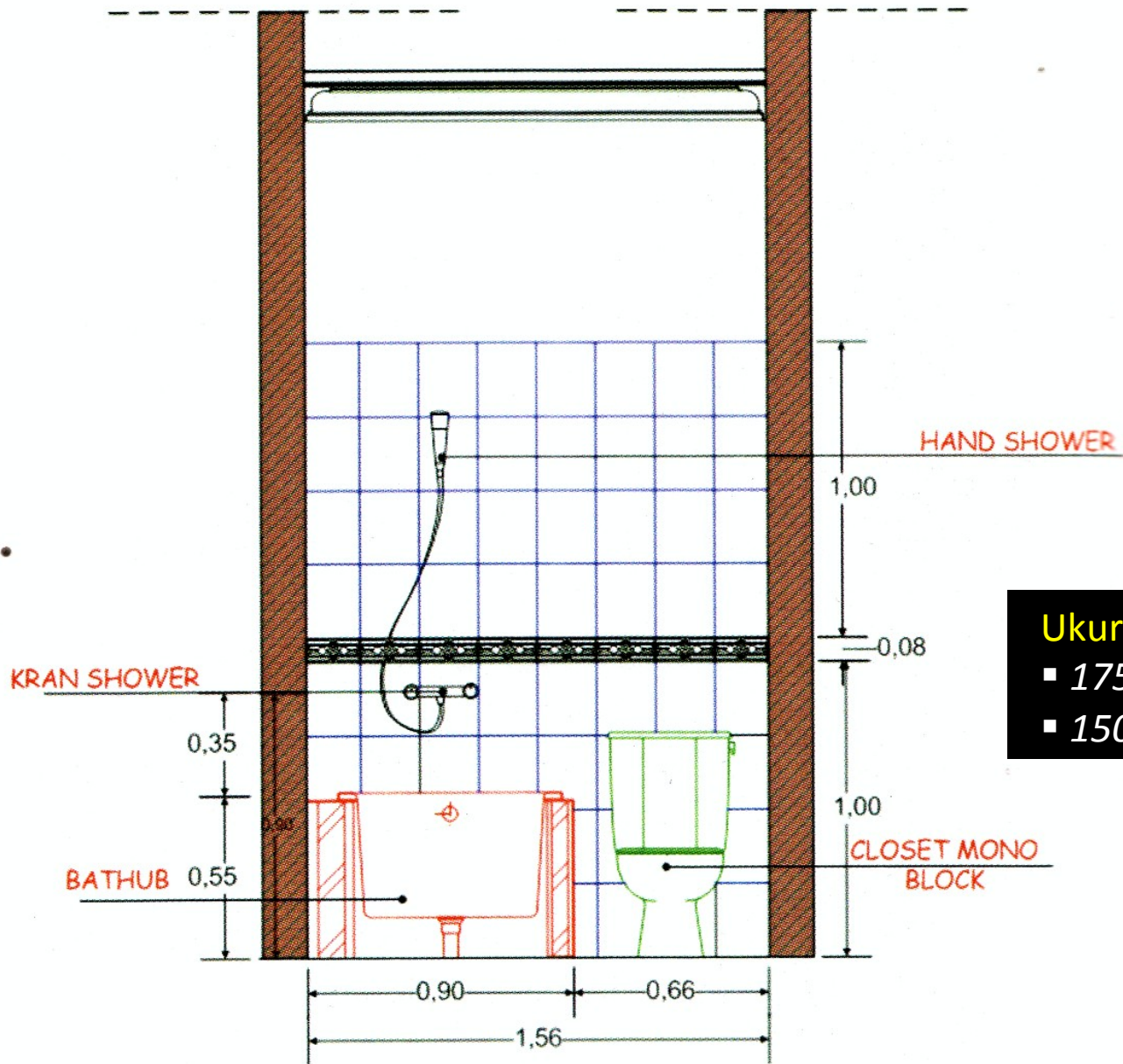
Utility



Pedoman Plumbing Indonesia
*Pipa diameter 80 mm atau 3 inchi
harus miring 2%*

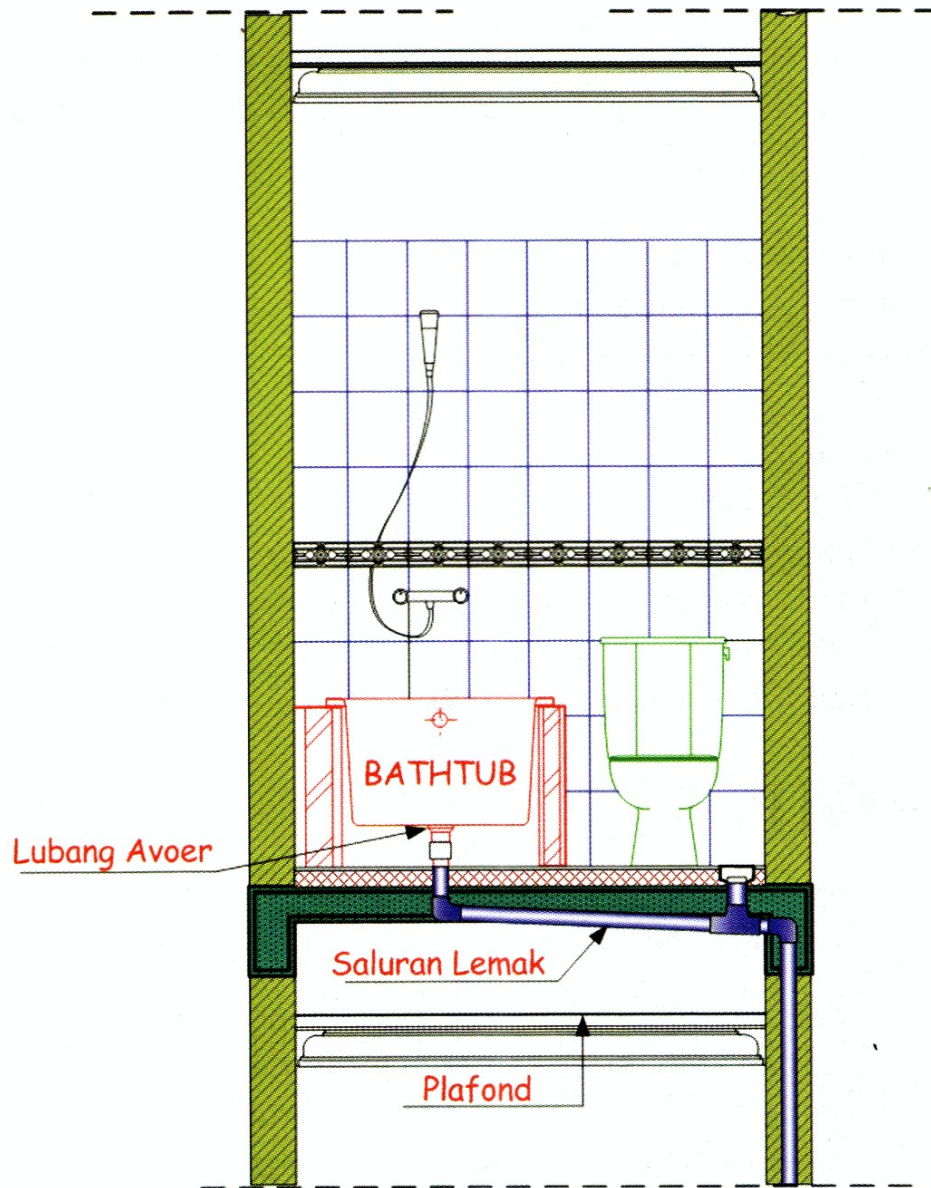
OUTLINE

Utility



Ukuran bath-up

- 175 x 80 x 40
- 150 x 150 x 55



OUTLINE

Utility

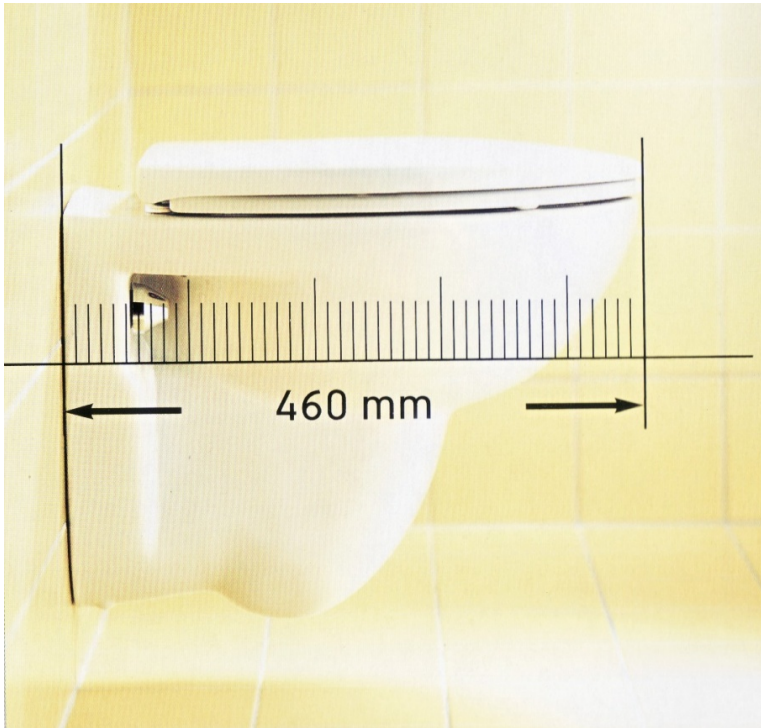
Ukuran bath-up

- 175 x 80 x 40
- 150 x 150 x 55



OUTLINE

Utility



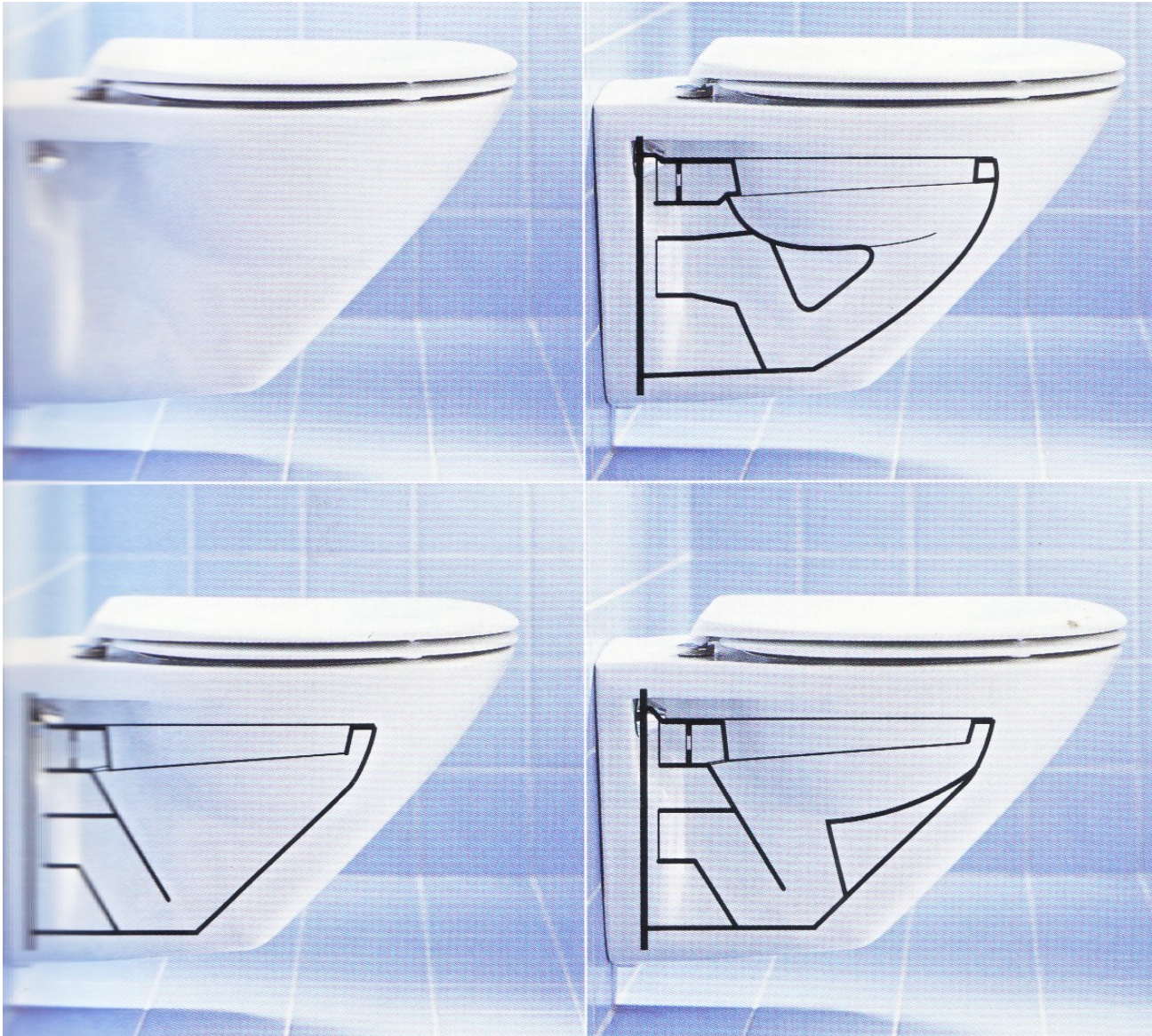
Wall-hung WC



Floor-standing WC

OUTLINE

Utility



OUTLINE

Utility

Flush



OUTLINE

Utility



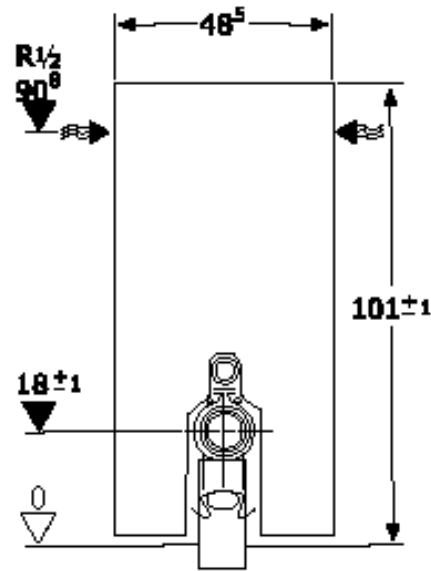
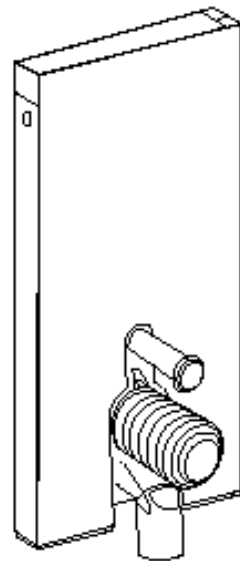
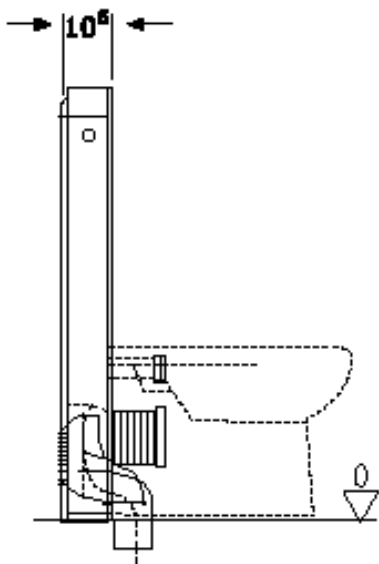
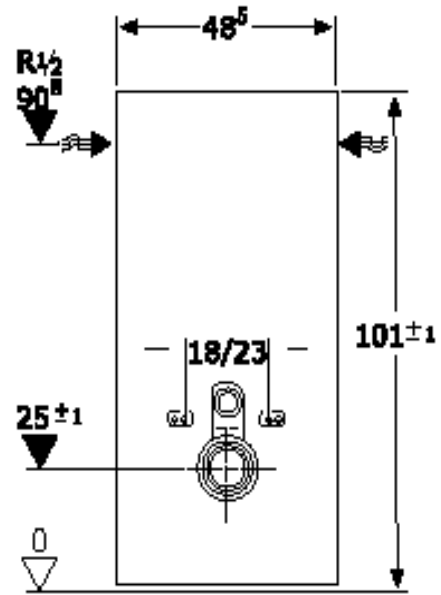
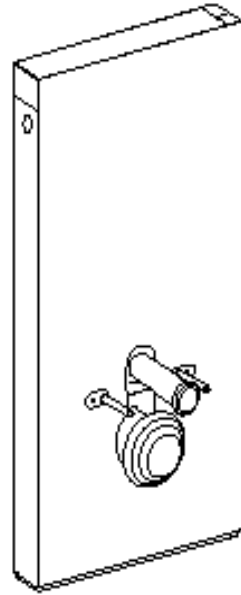
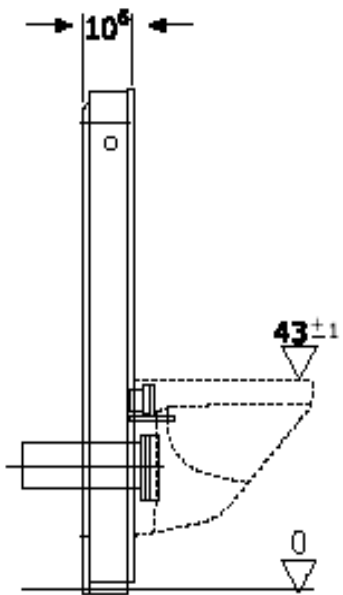
Wall-hung WC



Floor-standing WC

OUTLINE

Utility



OUTLINE
Utility

