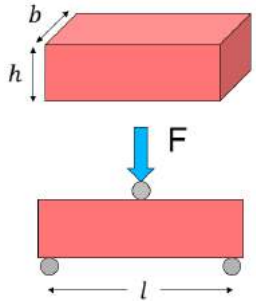
A. Flexural test on clay bricks:



	Brick A	Brick B
b (mm)		
h (mm)		
l (mm)		
F (N)		

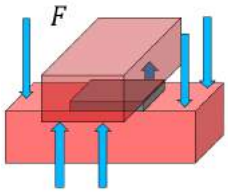
Tensile strength (MPa or N/mm²):

$$\sigma_{tf,b} = \frac{3Fl}{2bh^2}$$

Brick A:

Brick B:

B. Brick-mortar bonding testing - tension:



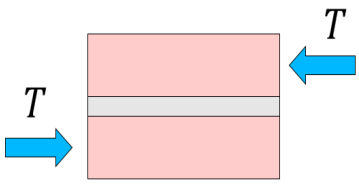
	1_4F
b (mm)	
F (N)	

Tensile strength of interface (MPa):

$$\sigma_{tf,int} = (F + w)/b^2 =$$

(weight of the hanging brick, w = 16N)

C. Brick-mortar bonding testing - shear:

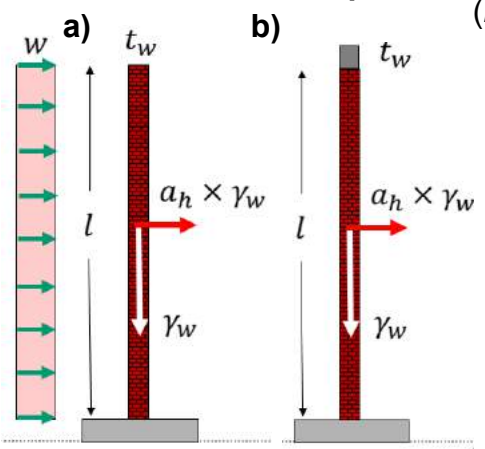


	1_4F
b (mm)	
L (mm)	
T (N)	

Shear strength of interface (MPa):

$$\tau_{f,int} = T/bL =$$

D. Wall failure, out-of-plane:



(l = 3m, b = 1m, t_w = 0.13m, γ_w = 17kN/m^3) ~ *use kN, kPa and m*

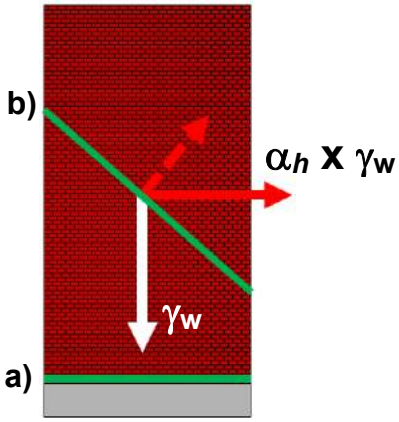
a) Free standing wall, critical acceleration (in 'g'):

$$a_{h,crit} = \frac{(\gamma_w l + \sigma_{tf,int})t_w}{3\gamma_w l^2} =$$

b) Supported wall, critical acceleration (in 'g'):

$$a_{h,crit} = \frac{4(\gamma_w l/2 + \sigma_{tf,int})t_w}{3\gamma_w l^2} =$$

E. Wall failure, in-plane:



(l = 3m, b = 1m, t_w = 0.13m, γ_w = 17kN/m^3) ~ *use kN, kPa and m*

a) Shear failure at the base, critical acceleration (in 'g'):

$$a_{h,crit} = \tau_f/\gamma_w l =$$

b) Tensile crack at 45°, critical acceleration (in 'g'):
(cos45° = 0.707)

$$a_{h,crit} = \sigma_{tf,int}/\gamma_w l \cos^2 45^o =$$