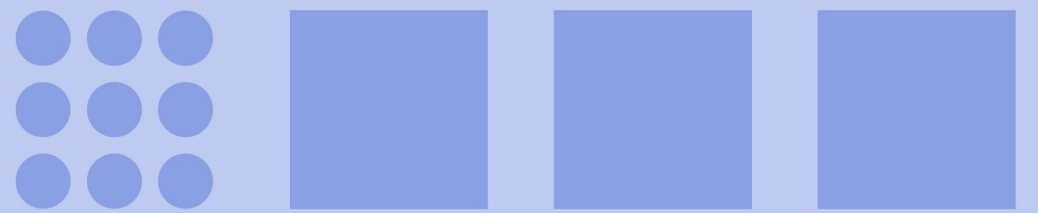


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Auli Lastunen / Eurokoodiseminaari 2022

EN 1996-1-1 Muuratut rakenteet: Mikä muuttui?



EUROCODES

EN 1996

Design of masonry structures



SFS-EN 1996-1-1

Kappalejako

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Liitteet

Kaikki liitteet edelleen informatiivisia eli voidaan kansallisesti jättää osa pois käytöstä



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Soveltamisala

Soveltamisalaa tarkennettu

Pääosin pystykuormitetut seinät, joissa ryhmän 4 muurauskappaleet (vaakasuuntaiset rei'ät) rajataan ulkopuolelle



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Materiaaliosavarmuusluvut

Ennen oli viisi sarjaa arvoja, joista perusteella yksi. Suomessa kansainvälisesti yksi tapa. Nyt sarjoja on enää yksi kansallisesti uudelleen.

Table 4.1 (NDP) — Partial factors on materials for masonry buildings

Material		γ_M
A	Masonry made with units of Category I, designed mortar ^a	2,0
B	Masonry made with units of Category I, prescribed mortar ^b	2,2
C	Masonry made with units of Category II, any mortar ^{a, b, e}	2,5
D	Anchorage of reinforcing steel and of bed joint reinforcement	2,2
E	Bed joint reinforcement, reinforcing steel and prestressing steel	1,15
F	Ancillary components ^{c, d}	2,2
G	Lintels according to EN 845-2 ^f	2,0

^a Requirements for designed mortars are given in EN 998-2 and EN 1996-2.
^b Requirements for prescribed mortars are given in EN 998-2 and EN 1996-2.
^c Declared values are mean values.
^d Damp proof courses whether sheet materials or masonry units are a part of the masonry and therefore are assumed to be covered by the masonry γ_M .
^e When the coefficient of variation for Category II units is not greater than 25 %.
^f Declared values for the load bearing capacity are mean values, but also characteristic values can be declared. The partial factor given assumes a declared mean value.

Kokeellinen mitoitus on edelleen sallittua.



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Raudoitusteräket ja täydentävät tuotteet

Raudoitusterästen osalta viitataan EN 1992-1-1:een eikä enää EN 10080:een

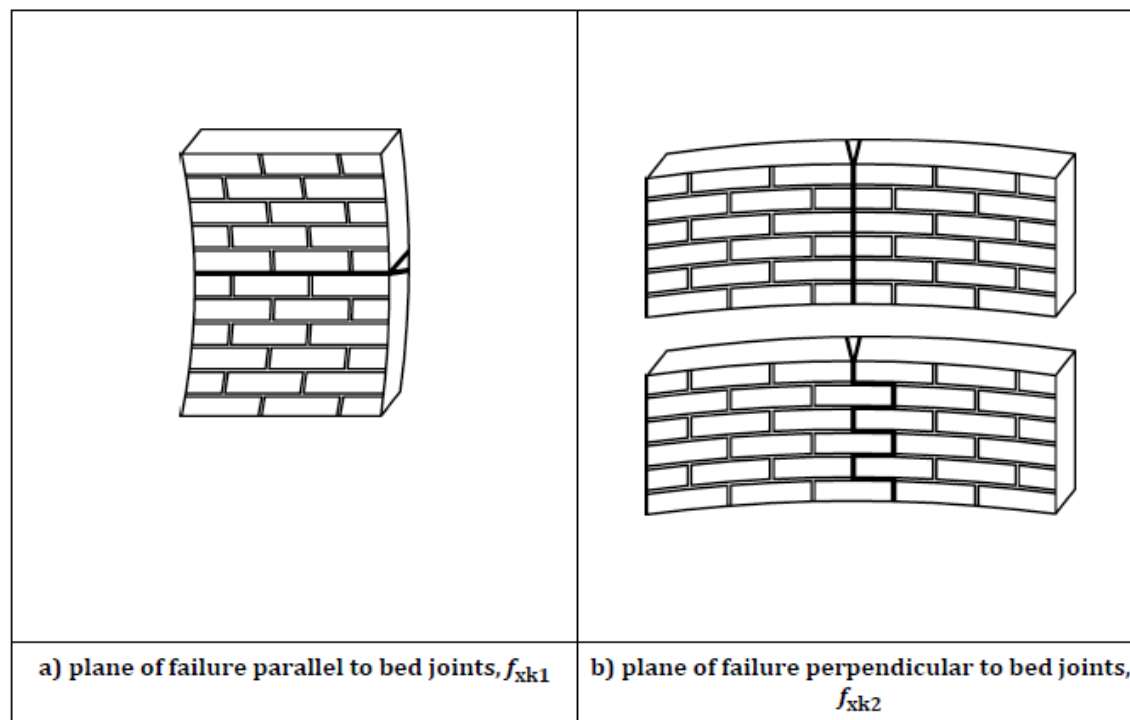
Täydentävien tuotteiden osalta viitataan edelleen relevantteihin tuotestandardeihin



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Taivutusmitoitus

Taivutuslujuuden f_{xk1} ja f_{xk2} arvot hiukan kasvaneet



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Raudoitusterästen säilyvyys

Kaikki viitteet AISI 304 ja AISI 316
viittauksiksi 1.4301 ja 1.4404 -te

Exposure class ^a	Minimum level of protection for reinforcing steel	
	Located in mortar	Located in concrete with cover less than required according to (3)
MX1	Unprotected carbon steel ^b	—
MX2	Carbon steel, hot-dip galvanized according to EN 10348-2 or with equivalent protection ^c	Carbon steel, hot-dip galvanized according to EN 10348-2 or with equivalent protection ^c
	Unprotected carbon steel, in masonry with a rendering mortar on the exposed face ^d	
MX3	Austenitic stainless steel 1.4404 or 1.4301 according to EN 10088-1	Carbon steel, heavily galvanized or with equivalent protection ^c
	Unprotected carbon steel, in masonry with a rendering mortar on the exposed face ^d	
MX4	Austenitic stainless steel 1.4404 according to EN 10088-1 or carbon steel heavily galvanized or with equivalent protection ^b with a rendering mortar on the exposed face ^d	Austenitic stainless steel 1.4404
MX5	Austenitic stainless steel 1.4404 or 1.4301 according to EN 10088-1 ^e	Austenitic stainless steel 1.4404 or 1.4301



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Mittaepätarkkuudet

Muutettu samanlaiseen muotoon kuin EN 1992-1-1:ssä

(3) The unfavourable effects of possible global imperfections should be allowed for by assuming that the structure is inclined at an angle θ_1 , in rad, given by:

$$\theta_1 = \theta_0 \alpha_h \alpha_m$$

(7.1)



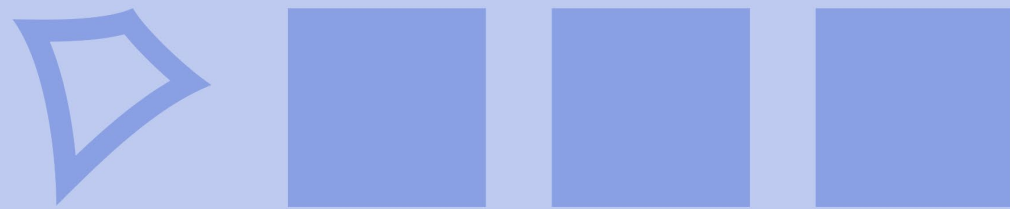
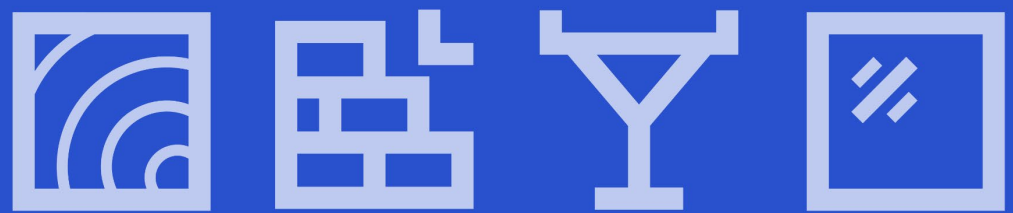
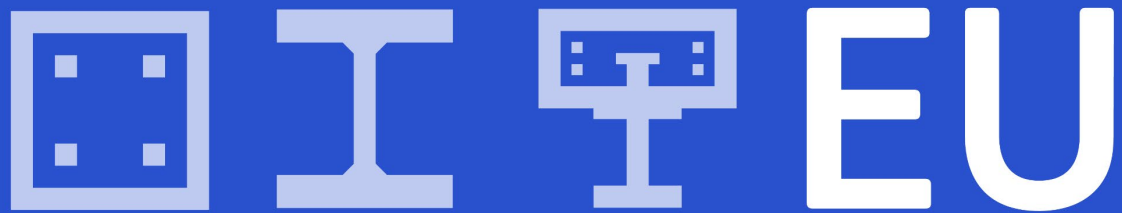
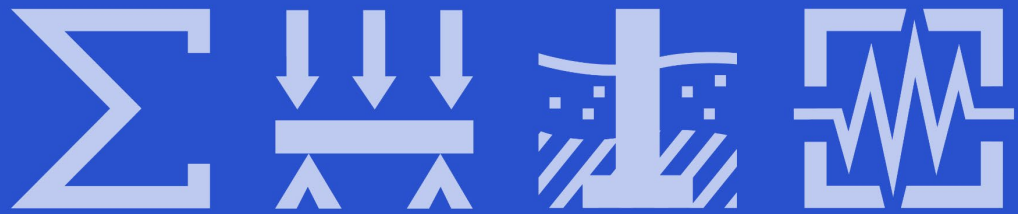
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Yhteenveto muutoksista

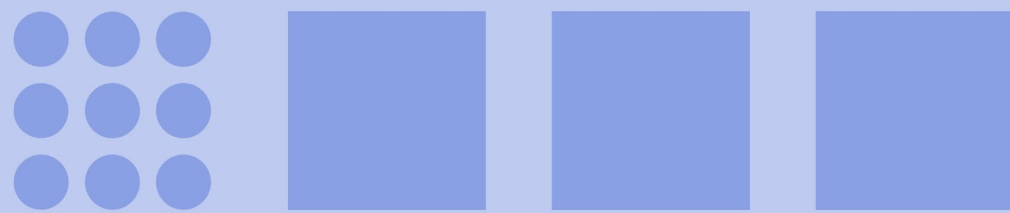
Jonkun verran pieniä muutoksia

Kaiken kaikkiaan toisen sukupolven tiili-eurokoodeissa on paljon vähemmän muutoksia kuin muissa eurokoodeissa





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Kysymyksiä?