RAPORT KONSTRUKTIV PALESTRA

KARAKTERISTIKAT E MATERIALEVE

Struktura e çelikut eshte realizuar me elemente çeliku karboni te salduar.

Me karakteristikat e meposhtme:

Pesha vetjake

$g = 7850\ kg/m^3$

Rezistenca maksimale ne terheqje

$f_u = 510\ N/mm^2$ (EN3. 3.2.3 Table 3.1)

Rezistenca e lejuar f_y

$f_y = 355\ N/mm^2$ (EN3. 3.2.3 Table 3.1)

Moduli i elasticitetit

$E_s = 210000\ N/mm^2$

$(f_u / f_y) >= 1.1$

Koefiçienti I zgjerimit linear termik

$\alpha = 12 \times 1\ 0^{-6}$ per K (for $T \leq 100°C$) EN 3-1-1: 2005 (3.2.6)

NG STRUCTURES SHPK NUIS: L79326502O

Koefiçienti I Poisson ratio ne fazen elastike

ν =0.3 EN 3-1-1: 2005 (E)
(3.2.6)

Faktori pjesor per strukturen e çelikut:

γ_s= 1.25 struktura e çelikut

Faktor I pjeseshem EN3-2.6 Table 6.1

Rezistenca llogaritese e rrjedhshmerise

f_{yd} = 284 N/mm2

Table 3.1: Nominal values of yield strength f_y and ultimate tensile strength f_u for hot rolled structural steel

Standard and steel grade	Nominal thickness of the element t [mm]			
	$t \leq 40$ mm		40 mm $< t \leq 80$ mm	
	f_y [N/mm^2]	f_u [N/mm^2]	f_y [N/mm^2]	f_u [N/mm^2]
EN 10025-2				
S 235	235	360	215	360
S 275	275	430	255	410
S 355	355	510	335	470
S 450	440	550	410	550
EN 10025-3				
S 275 N/NL	275	390	255	370
S 355 N/NL	355	490	335	470
S 420 N/NL	420	520	390	520
S 460 N/NL	460	540	430	540
EN 10025-4				
S 275 M/ML	275	370	255	360
S 355 M/ML	355	470	335	450
S 420 M/ML	420	520	390	500
S 460 M/ML	460	540	430	530
EN 10025-5				
S 235 W	235	360	215	340
S 355 W	355	510	335	490
EN 10025-6				
S 460 Q/QL/QL1	460	570	440	550

Table 3.1 – EN 3. 3.2.3

Table 6.1: Partial factors

a) resistance of members and cross section:	
– resistance of cross sections to excessive yielding including local buckling	γ_{M0}
– resistance of members to instability assessed by member checks	γ_{M1}
– resistance of cross sections in tension to fracture	γ_{M2}
b) resistance of joints	
– resistance of bolts – resistance of rivets – resistance of pins – resistance of welds – resistance of plates in bearing	γ_{M2}
– slip resistance – at ultimate limit state (Category C) – at serviceability limit state	γ_{M3} $\gamma_{M3,ser}$
– bearing resistance of an injection bolt	γ_{M4}
– resistance of joints in hollow section lattice girders	γ_{M5}
– resistance of pins at serviceability limit state	$\gamma_{M6,ser}$
– preload of high strength bolts	γ_{M7}

NOTE 1: For the partial factor γ_c for the resistance of concrete see EN 1992.

NOTE 2: The partial factors γ_{Mi} for bridges may be defined in the National Annex. The following numerical values are recommended:

$\gamma_{M0} = 1,00$

$\gamma_{M1} = 1,10$

$\gamma_{M2} = 1,25$

$\gamma_{M3} = 1,25$

$\gamma_{M3,ser} = 1,10$

$\gamma_{M4} = 1,10$

$\gamma_{M5} = 1,10$

$\gamma_{M6,ser} = 1,00$

$\gamma_{M7} = 1,10$

1.1 Palestra

Çeliku strukturor perbehet nga kolona te tipit IPE 300 dhe HE400A, traret qe I lidhin ato jane tipi IPE 300 dhe IPE 240 IPE160 per parapetet, profil I punuar ne te ftohte te cilet mundesojne vendosjen e paneleve sanduiç.

Struktura ka gjithashtu disa mbajtese vertikale rrethore me permasa 140 X 5 mm dhe per mbajteset e çatise 127x4. **Struktura e çelikut do te jete 355 JR**

Pas llogaritjes se struktures, u kontrollua plotesimi I kushteve te meposhtme:

a. Ne perkulje

$M_{Ed}/M_{c,Rd} \leq 1$ (6.10) (EC3 6.2.5)

Ku;

M_{Ed} momenti maksimal nga ngarkesat e jashtme

$M_{c,Rd}$ momenti mbeshtetes maksimal i prerjes terthore te seksionit

$M_{c,Rd} = W_{pl} f_y/\gamma_{M0}$ (EC3 6.2.5)

b. Ne prerje

Vlera e projektimit te forces prerese V_{Ed} ne cdo seksion kryq duhet te plotesoje:

$V_{Ed}/V_{c,Rd} \leq 1$ (6.12)

(EN 3 6.2.6)

$$V_{pl,Rd} = \frac{A_v\left(f_y/\sqrt{3}\right)}{\gamma_{M0}}$$ (6.18) (EN 3 6.2.6)

Profile tub me seksion drejtkendor : (EN 3 6.2.6 (3.f))

Te ngarkuara paralelisht me lartesine

Ah/(b+h)

Te ngarkuara paralelisht me gjeresine

Ab/(b+h)

Ku A eshte siperfaqja e seksionit kryq;

b eshte gjeresia e pergjithshme;

h eshte lartesia e pergjithshme;

Elementet e fugave(pllakave) do te jene prej çeliku me qendrueshmeri rrjedhese jo me te vogel se forca rrjedhese e elementeve qe do te bashkohen.

1.2 Ngarkesat e perhershme (palestra)

Ngarkesat e perhershme ne kete objekt:

➢ *Soletat beton-arme H=20cm*

• Solete b/arme monolite	500 daN/m²
• Shtrese betoni + Pllaka t= 10 cm	180 daN/m²
• Tavane te varura + instalime HVAC	20 daN/m²
Total daN/m²	**700**

➢ *Mbulesa sanduiç H=10cm*

• Mbulesa sanduiç ne cati dhe fasade H=10cm	20 daN/m²
• Instalimet HVAC	5 daN/m²
Total daN/m²	**25**

***Shenim -1*:**

Ngarkesat e pllakes se themelit , soletave, kolonave, mureve b/arme, trareve dhe strukturave te çelikut merren ne konsiderate nga programi duke perdorur dimensione reale, peshe dhe permasa reale, sipas informacionit te materialeve te permendura ne paragrafin 2.

1.3 Ngarkesa te perkoheshme

1.3.1 NGARKESA VERTIKALE

Sipas Eurocode 1, ngarkesat e perkoheshme te objektit jane marre:

C1	Table 6.1	(EN1 -6.3.1.1)
H	Table 6.9	(EN-1 -6.3.4.2)

Table 6.1 - Categories of use

Category	Specific Use	Example
A	Areas for domestic and residential activities	Rooms in residential buildings and houses; bedrooms and wards in hospitals; bedrooms in hotels and hostels kitchens and toilets.
B	Office areas	
C	Areas where people may congregate (with the exception of areas defined under category A, B, and D[1])	**C1**: Areas with tables, etc. e.g. areas in schools, cafés, restaurants, dining halls, reading rooms, receptions. **C2**: Areas with fixed seats, e.g. areas in churches, theatres or cinemas, conference rooms, lecture halls, assembly halls, waiting rooms, railway waiting rooms. **C3**: Areas without obstacles for moving people, e.g. areas in museums, exhibition rooms, etc. and access areas in public and administration buildings, hotels, hospitals, railway station forecourts. **C4**: Areas with possible physical activities, e.g. dance halls, gymnastic rooms, stages. **C5**: Areas susceptible to large crowds, e.g. in buildings for public events like concert halls, sports halls including stands, terraces and access areas and railway platforms.
D	Shopping areas	**D1**: Areas in general retail shops **D2**: Areas in department stores

[1] Attention is drawn to 6.3.1.1(2), in particular for C4 and C5. See EN 1990 when dynamic effects need to be considered. For Category E, see Table 6.3

NOTE 1 Depending on their anticipated uses, areas likely to be categorised as C2, C3, C4 may be categorised as C5 by decision of the client and/or National annex.

NOTE 2 The National annex may provide sub categories to A, B, C1 to C5, D1 and D2

NOTE 3 See 6.3.2 for storage or industrial activity

Dhe specifikisht ngarkeat e perkoheshme jane:

Ambjentet e sherbimit	3 kN /m²	Table 6.2	(EN1 -6.3.1.2)
Ambjentet e shkalleve	3 kN /m²	Table 6.2	(EN1 - 6.3.1.2)
Mbulimi I tarraces	1 kN /m²	Table 6.9, 6.10	(EN1 - 6.3.1.2)

Mbulimi I atriumit	0.4 kN /m²	Table 6.9, 6.10	(EN1 - 6.3.1.2)
Tenda e hyrjes	0.4 kN /m²	Table 6.9, 6.10	(EN1 - 6.3.1.2)
Mbulimi I palestres	0.4 kN /m²	Table 6.9, 6.10	(EN1 - 6.3.1.2)

1.4 Ngarkesat e eres per palestren

Sipas K.T.P.6-78 shpejtesia maksimale e eres 31m/s nga harta gjeografike e shpejtesise se eres ne Shqiperi.

Ngarkesa e eres eshte e lidhur me presionin e eres P_0=60daN/m2, forma dhe lartesia e objektit dhe llogaritet si me poshte:

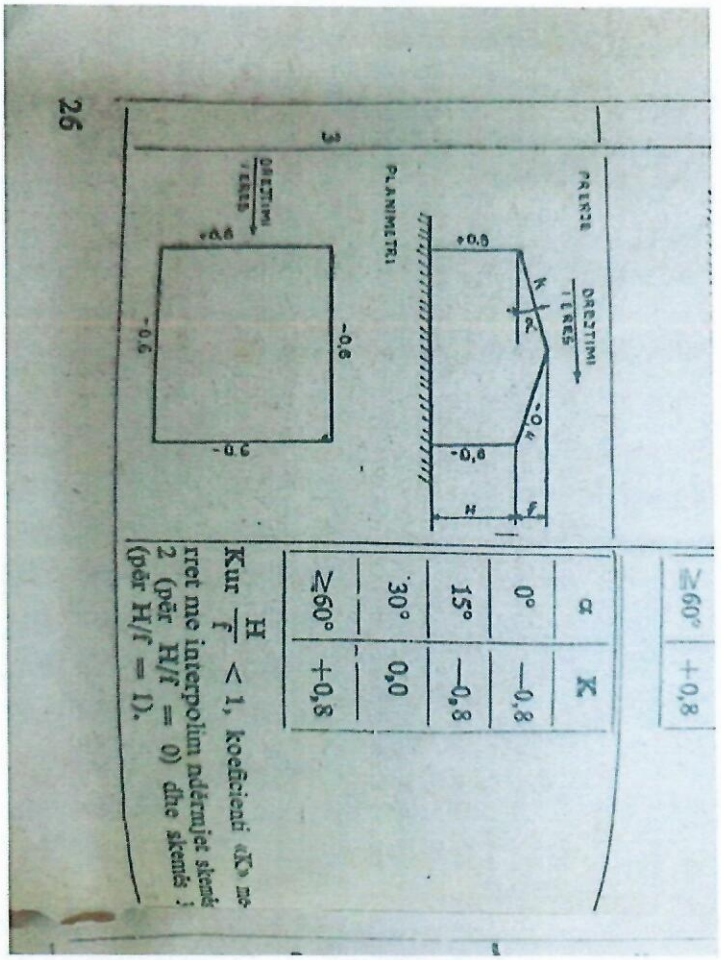
$P=k \times k_a \times P_0$

k - koefiçienti aerodinamik

k_1 = +/-0.8 per panelet sanduiç vertikale ne fasaden kryesore e lidhur me tabelen 3

k_1 = +/-0.6 per panelet sanduiç vertikale ne fasaden sekondare e lidhur me tabelen 3

k_2 = -0.8 dhe -0.4 per panelet sanduiç ne çati e lidhur me tabelen 3



k_a - koefiçienti qe lidhet me lartesine, merret:

1.0 per ndertesa deri ne 5.2 m.

P_1=+/-k x k_a x P_0 =1.0x 0.8x 60 = +/-48 daN/m2

P_2=+/-k x k_a x P_0 =1.0x 0.6x 60 = +/-36 daN/m2

P_2=+/-k x k_a x P_0 =1.0x 0.4x 60 = +/-24 daN/m2

1.5 Komponentet horizontal te veprimeve sizmike

1.5.1 KOMPONENTET HORIZONTALE DHE VERTIKALE PER PALESTREN

Veprimi sizmik eshte marre ne konsiderate me te tre komponentet e tij orthogonal, te nominuar si E_{Ex}, E_{Ey} dhe E_{Ez}, ku tre veprimet respektive te komponenteve perfaqesojne te njejtin spekter reagimi dhe plotesojne metoden e kombinimit kuadratik (CQC) e cila perdoret si kombinim I te tre komponenteve.

Tre kombinimet e mundeshme jane si me poshte:

a) E_{Edx} "+" 0,30 E_{Edy} "+" 0,30 E_{Edz} (4.20) (EN 8-1 4.3.3.5.2)

b) 0,30 E_{Edx} "+" E_{Edy} "+" 0,30 E_{Edz} (4.21) (EN 8-1 4.3.3.5.2)

c) 0,30 E_{Edx} "+" 0,30 E_{Edy} "+" E_{Edz} (4.22) (EN 8-1 4.3.3.5.2)

Ku '+' nenkupton "te kombinohet me "

E_{Edx} paraqet efektet e veprimit per shkak te aplikimit te veprimit sizmik horizontal pergjate boshtit te zgjedhur horizontal x te struktures.

E_{Edy} paraqet efektet e veprimit per shkak te aplikimit te veprimit sizmik horizontal pergjate boshtit te zgjedhur horizontal y te struktures.

E_{Edz} paraqet efektet e veprimit per shkak te aplikimit te veprimit sizmik vertical pergjate boshtit te zgjedhur vertikal z te struktures.

(1) Efekti I brendshem I veprimit sizmik te projektimit do te vleresohet duke marre parasysh pranine e masave te lidhura me ngarkesat e gravitetit qe shfaqen ne kombinimet e meposhteme te ngarkesave:

$G_k + \Sigma_i(\psi_{Ei} Q_{ik})$ (EN8 - 3.2.4 (3.17))

Ku ψ_E eshte koefiçienti I kombinimit per variablin i.

Vlera minimale e koefiçientit te kombinimit ψ_{Ei} e paraqitur per te llogaritur efektin e veprimit sizmik do te kategorizohet sipas shprehjeve te meposhtme:

$\psi_{Ei} = \psi_{2i} x \phi$ Tab.4.2 (EN8 -4.2.)

Çatia : $\psi_{Ei} = \psi_{2i} x \phi = 0{,}6x \ 1.0 = 0{,}6$ (EN1-Cat C3)

Dyqane te zena ne menyre te pavarur: $\psi_{Ei} = \psi_{2i} x \phi = 0{,}6x \ 0{,}5 = 0{,}3$ (EN1-Cat C3)

Shkallet: $\psi_{Ei} = \psi_{2i} \times \phi = 0{,}6 \times 0{,}8 = 0{,}48$ (EN1-Cat C3)

Type of variable action	Storey	φ
Categories A-C*	Roof	1,0
	Storeys with correlated occupancies	0,8
	Independently occupied storeys	0,5
Categories D-F* and Archives		1,0

1.6 Faktori I Sjelljes per Palestren

Tipi I duktilitetit te struktures, DCM (duktilitet mesatar) Table 6.2 (EN8 - 1.6.3.2)

Struktura klasifikohet si "Solete rezistente ndaj momentit e kombinuar me kontraventime koncentrike".

Faktori I sjelljes se struktures nga X axes **q= 3.0, per pjeset e betonit.**

Faktori I sjelljes se struktures nga Y axes **q= 3.0, per pjeset e betonit.**

Faktori I sjelljes se struktures nga X axes **q= 4.0, per pjeset e çelikut (Tabla 6.2(f))** (EN 8-1 6.3.2)

Faktori I sjelljes se struktures nga y Y axes **q= 4.0, per pjeset e celikut (Tabla 6.2(f))** (EN 8-1 6.3.2)

Table 6.2: Upper limit of reference values of behaviour factors for systems regular in elevation

STRUCTURAL TYPE	Ductility Class	
	DCM	DCH
a) Moment resisting frames	4	$5\alpha_u/\alpha_1$
b) Frame with concentric bracings Diagonal bracings V-bracings	 4 2	 4 2,5
c) Frame with eccentric bracings	4	$5\alpha_u/\alpha_1$
d) Inverted pendulum	2	$2\alpha_u/\alpha_1$
e) Structures with concrete cores or concrete walls	See section 5	
f) Moment resisting frame with concentric bracing	4	$4\alpha_u/\alpha_1$
g) Moment resisting frames with infills Unconnected concrete or masonry infills, in contact with the frame	2	2
Connected reinforced concrete infills	See section 7	
Infills isolated from moment frame (see moment frames)	4	$5\alpha_u/\alpha_1$

(2) If the building is non-regular in elevation (see **4.2.3.3**) the upper limit values of q listed in Table 6.2 should be reduced by 20 % (see **4.2.3.1(7)** and Table 4.1).

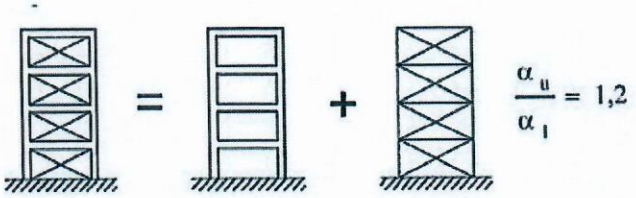


Figure 6.7: Moment resisting frame combined with concentric bracing (dissipative zones in moment frame and in tension diagonals). Default value for α_u/α_1 (see 6.3.2(3) and Table 6.2).

RAPORT KONSTRUKTIV PALESTRA

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Me karakteristikat e meposhtme:

Pesha vetjake

$g = 7850\ kg/m^3$

Rezistenca maksimale ne terheqje

$f_u = 510\ N/mm^2$ (EN3. 3.2.3 Table 3.1)

Rezistenca e lejuar f_y

$f_y = 355\ N/mm^2$ (EN3. 3.2.3 Table 3.1)

Moduli i elasticitetit

$E_s = 210000\ N/mm^2$

$(f_u / f_y) >= 1.1$

Koefiçienti I zgjerimit linear termik

$\alpha = 12 \times 1\ 0^{-6}$ per K (for $T \leq 100°C$) EN 3-1-1: 2005 (3.2.6)

Koefiçienti I Poisson ratio ne fazen elastike

ν =0.3 EN 3-1-1: 2005 (E)
(3.2.6)

Faktori pjesor per strukturen e çelikut:

γ_s= 1.25 struktura e çelikut

Faktor I pjeseshem EN3-2.6 Table 6.1

Rezistenca llogaritese e rrjedhshmerise

f_{yd} = 284 N/mm2

Table 3.1: Nominal values of yield strength f_y and ultimate tensile strength f_u for hot rolled structural steel

Standard and steel grade	Nominal thickness of the element t [mm]			
	$t \leq 40$ mm		40 mm $< t \leq 80$ mm	
	f_y [N/mm^2]	f_u [N/mm^2]	f_y [N/mm^2]	f_u [N/mm^2]
EN 10025-2				
S 235	235	360	215	360
S 275	275	430	255	410
S 355	355	510	335	470
S 450	440	550	410	550
EN 10025-3				
S 275 N/NL	275	390	255	370
S 355 N/NL	355	490	335	470
S 420 N/NL	420	520	390	520
S 460 N/NL	460	540	430	540
EN 10025-4				
S 275 M/ML	275	370	255	360
S 355 M/ML	355	470	335	450
S 420 M/ML	420	520	390	500
S 460 M/ML	460	540	430	530
EN 10025-5				
S 235 W	235	360	215	340
S 355 W	355	510	335	490
EN 10025-6				
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Table 3.1 – EN 3. 3.2.3

Table 6.1: Partial factors

a) resistance of members and cross section:	
– resistance of cross sections to excessive yielding including local buckling	γ_{M0}
– resistance of members to instability assessed by member checks	γ_{M1}
– resistance of cross sections in tension to fracture	γ_{M2}
b) resistance of joints	
– resistance of bolts – resistance of rivets – resistance of pins – resistance of welds – resistance of plates in bearing	γ_{M2}
– slip resistance – at ultimate limit state (Category C) – at serviceability limit state	γ_{M3} $\gamma_{M3,ser}$
– bearing resistance of an injection bolt	γ_{M4}
– resistance of joints in hollow section lattice girders	γ_{M5}
– resistance of pins at serviceability limit state	$\gamma_{M6,ser}$
– preload of high strength bolts	γ_{M7}

NOTE 1: For the partial factor χ for the resistance of concrete see EN 1992.

NOTE 2: The partial factors γ_{Mi} for bridges may be defined in the National Annex. The following numerical values are recommended:

$\gamma_{M0} = 1,00$

$\gamma_{M1} = 1,10$

$\gamma_{M2} = 1,25$

$\gamma_{M3} = 1,25$

$\gamma_{M3,ser} = 1,10$

$\gamma_{M4} = 1,10$

$\gamma_{M5} = 1,10$

$\gamma_{M6,ser} = 1,00$

$\gamma_{M7} = 1,10$

1.1 Palestra

Çeliku strukturor perbehet nga kolona te tipit IPE 300 dhe HE400A, traret qe I lidhin ato jane tipi IPE 300 dhe IPE 240 IPE160 per parapetet, profil I punuar ne te ftohte te cilet mundesojne vendosjen e paneleve sanduiç.

Struktura ka gjithashtu disa mbajtese vertikale rrethore me permasa 140 X 5 mm dhe per mbajteset e çatise 127x4. **Struktura e çelikut do te jete 355 JR**

Pas llogaritjes se struktures, u kontrollua plotesimi I kushteve te meposhtme:

a. Ne perkulje

$M_{Ed}/M_{c,Rd} \leq 1$ (6.10) (EC3 6.2.5)

Ku;

M_{Ed} momenti maksimal nga ngarkesat e jashtme

$M_{c,Rd}$ momenti mbeshtetes maksimal i prerjes terthore te seksionit

$M_{c,Rd} = W_{pl} f_y/\gamma_{M0}$ (EC3 6.2.5)

b. Ne prerje

Vlera e projektimit te forces prerese V_{Ed} ne cdo seksion kryq duhet te plotesoje:

$V_{Ed}/V_{c,Rd} \leq 1$ (6.12)

(EN 3 6.2.6)

$$V_{pl,Rd} = \frac{A_v\left(f_y/\sqrt{3}\right)}{\gamma_{M0}}$$ (6.18) (EN 3 6.2.6)

Profile tub me seksion drejtkendor : (EN 3 6.2.6 (3.f))

Te ngarkuara paralelisht me lartesine

Ah/(b+h)

Te ngarkuara paralelisht me gjeresine

Ab/(b+h)

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b eshte gjeresia e pergjithshme;

h eshte lartesia e pergjithshme;

Elementet e fugave(pllakave) do te jene prej çeliku me qendrueshmeri rrjedhese jo me te vogel se forca rrjedhese e elementeve qe do te bashkohen.

1.2 Ngarkesat e perhershme (palestra)

Ngarkesat e perhershme ne kete objekt:

➢ *Soletat beton-arme H=20cm*

• Solete b/arme monolite	500 daN/m²
• Shtrese betoni + Pllaka t= 10 cm	180 daN/m²
• Tavane te varura + instalime HVAC	20 daN/m²
Total daN/m²	**700**

➢ *Mbulesa sanduiç H=10cm*

• Mbulesa sanduiç ne cati dhe fasade H=10cm	20 daN/m²
• Instalimet HVAC	5 daN/m²
Total daN/m²	**25**

***Shenim -1*:**

Ngarkesat e pllakes se themelit , soletave, kolonave, mureve b/arme, trareve dhe strukturave te çelikut merren ne konsiderate nga programi duke perdorur dimensione reale, peshe dhe permasa reale, sipas informacionit te materialeve te permendura ne paragrafin 2.

1.3 Ngarkesa te perkoheshme

1.3.1 NGARKESA VERTIKALE

Sipas Eurocode 1, ngarkesat e perkoheshme te objektit jane marre:

C1	Table 6.1	(EN1 -6.3.1.1)
H	Table 6.9	(EN-1 -6.3.4.2)

Table 6.1 - Categories of use

Category	Specific Use	Example
A	Areas for domestic and residential activities	Rooms in residential buildings and houses; bedrooms and wards in hospitals; bedrooms in hotels and hostels kitchens and toilets.
B	Office areas	
C	Areas where people may congregate (with the exception of areas defined under category A, B, and D[1])	**C1**: Areas with tables, etc. e.g. areas in schools, cafés, restaurants, dining halls, reading rooms, receptions. **C2**: Areas with fixed seats, e.g. areas in churches, theatres or cinemas, conference rooms, lecture halls, assembly halls, waiting rooms, railway waiting rooms. **C3:** Areas without obstacles for moving people, e.g. areas in museums, exhibition rooms, etc. and access areas in public and administration buildings, hotels, hospitals, railway station forecourts. **C4:** Areas with possible physical activities, e.g. dance halls, gymnastic rooms, stages. **C5**: Areas susceptible to large crowds, e.g. in buildings for public events like concert halls, sports halls including stands, terraces and access areas and railway platforms.
D	Shopping areas	**D1:** Areas in general retail shops **D2**: Areas in department stores

[1] Attention is drawn to 6.3.1.1(2), in particular for C4 and C5. See EN 1990 when dynamic effects need to be considered. For Category E, see Table 6.3

NOTE 1 Depending on their anticipated uses, areas likely to be categorised as C2, C3, C4 may be categorised as C5 by decision of the client and/or National annex.

NOTE 2 The National annex may provide sub categories to A, B, C1 to C5, D1 and D2

NOTE 3 See 6.3.2 for storage or industrial activity

Dhe specifikisht ngarkeat e perkoheshme jane:

Ambjentet e sherbimit	3 **kN /m²**	Table 6.2	(EN1 -6.3.1.2)
Ambjentet e shkalleve	3 **kN /m²**	Table 6.2	(EN1 - 6.3.1.2)
Mbulimi I tarraces	1 **kN /m²**	Table 6.9, 6.10	(EN1 - 6.3.1.2)

Mbulimi I atriumit 6.3.1.2)	0.4 kN /m²	Table 6.9, 6.10	(EN1 -
Tenda e hyrjes 6.3.1.2)	0.4 kN /m²	Table 6.9, 6.10	(EN1 -
Mbulimi I palestres 6.3.1.2)	0.4 kN /m²	Table 6.9, 6.10	(EN1 -

1.4 Ngarkesat e eres per palestren

Sipas K.T.P.6-78 shpejtesia maksimale e eres 31m/s nga harta gjeografike e shpejtesise se eres ne Shqiperi.

Ngarkesa e eres eshte e lidhur me presionin e eres P_0=60daN/m2, forma dhe lartesia e objektit dhe llogaritet si me poshte:

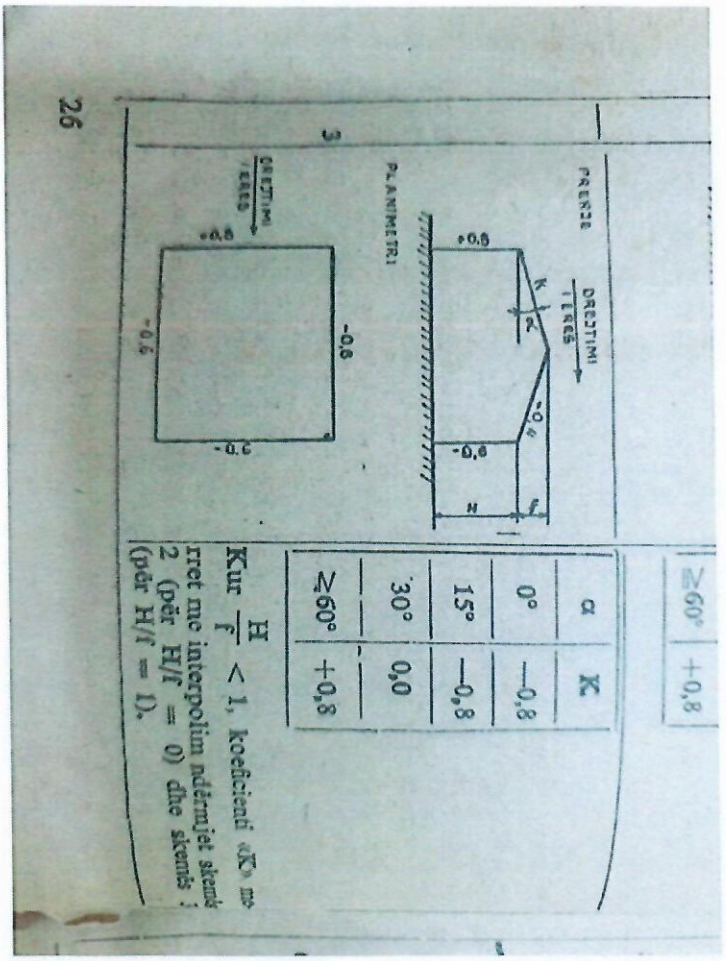
$P=k \times k_a \times P_0$

k - koefiçienti aerodinamik

k_1 = +/-0.8 per panelet sanduiç vertikale ne fasaden kryesore e lidhur me tabelen 3

k_1 = +/-0.6 per panelet sanduiç vertikale ne fasaden sekondare e lidhur me tabelen 3

k_2 = -0.8 dhe -0.4 per panelet sanduiç ne çati e lidhur me tabelen 3



k_a - koefiçienti qe lidhet me lartesine, merret:

1.0 per ndertesa deri ne 5.2 m.

P_1=+/-k x k_a x P_0 =1.0x 0.8x 60 = +/-48 daN/m2

P_2=+/-k x k_a x P_0 =1.0x 0.6x 60 = +/-36 daN/m2

P_2=+/-k x k_a x P_0 =1.0x 0.4x 60 = +/-24 daN/m2

1.5 Komponentet horizontal te veprimeve sizmike

1.5.1 KOMPONENTET HORIZONTALE DHE VERTIKALE PER PALESTREN

Veprimi sizmik eshte marre ne konsiderate me te tre komponentet e tij orthogonal, te nominuar si E_{Ex}, E_{Ey} dhe E_{Ez}, ku tre veprimet respektive te komponenteve perfaqesojne te njejtin spekter reagimi dhe plotesojne metoden e kombinimit kuadratik (CQC) e cila perdoret si kombinim I te tre komponenteve.

Tre kombinimet e mundeshme jane si me poshte:

a) E_{Edx} "+" 0,30 E_{Edy} "+" 0,30 E_{Edz} (4.20) (EN 8-1 4.3.3.5.2)

b) 0,30 E_{Edx} "+" E_{Edy} "+" 0,30 E_{Edz} (4.21) (EN 8-1 4.3.3.5.2)

c) 0,30 E_{Edx} "+" 0,30 E_{Edy} "+" E_{Edz} (4.22) (EN 8-1 4.3.3.5.2)

Ku '+' nenkupton "te kombinohet me "

E_{Edx} paraqet efektet e veprimit per shkak te aplikimit te veprimit sizmik horizontal pergjate boshtit te zgjedhur horizontal x te struktures.

E_{Edy} paraqet efektet e veprimit per shkak te aplikimit te veprimit sizmik horizontal pergjate boshtit te zgjedhur horizontal y te struktures.

E_{Edz} paraqet efektet e veprimit per shkak te aplikimit te veprimit sizmik vertical pergjate boshtit te zgjedhur vertikal z te struktures.

(1) Efekti I brendshem I veprimit sizmik te projektimit do te vleresohet duke marre parasysh pranine e masave te lidhura me ngarkesat e gravitetit qe shfaqen ne kombinimet e meposhteme te ngarkesave:

$G_k + \Sigma_i(\psi_{Ei} Q_{ik})$ (EN8 - 3.2.4 (3.17))

Ku ψ_E eshte koefiçienti I kombinimit per variablin i.

Vlera minimale e koefiçientit te kombinimit ψ_{Ei} e paraqitur per te llogaritur efektin e veprimit sizmik do te kategorizohet sipas shprehjeve te meposhtme:

$\psi_{Ei} = \psi_{2i} x \phi$ Tab.4.2 (EN8 -4.2.)

Çatia : $\psi_{Ei} = \psi_{2i} x \phi = 0,6x \ 1.0 = 0,6$ (EN1-Cat C3)

Dyqane te zena ne menyre te pavarur: $\psi_{Ei} = \psi_{2i} x \ \phi = 0,6x \ 0,5 = 0,3$ (EN1-Cat C3)

Shkallet: $\psi_{Ei} = \psi_{2i} \times \phi = 0{,}6 \times 0{,}8 = 0{,}48$ (EN1-Cat C3)

Type of variable action	Storey	φ
Categories A-C*	Roof	1,0
	Storeys with correlated occupancies	0,8
	Independently occupied storeys	0,5
Categories D-F* and Archives		1,0

1.6 Faktori I Sjelljes per Palestren

Tipi I duktilitetit te struktures, DCM (duktilitet mesatar) Table 6.2 (EN8 - 1.6.3.2)

Struktura klasifikohet si "Solete rezistente ndaj momentit e kombinuar me kontraventime koncentrike".

Faktori I sjelljes se struktures nga X axes **q= 3.0, per pjeset e betonit.**

Faktori I sjelljes se struktures nga Y axes **q= 3.0, per pjeset e betonit.**

Faktori I sjelljes se struktures nga X axes **q= 4.0, per pjeset e çelikut (Tabla 6.2(f))** (EN 8-1 6.3.2)

Faktori I sjelljes se struktures nga y Y axes **q= 4.0, per pjeset e celikut (Tabla 6.2(f))** (EN 8-1 6.3.2)

Table 6.2: Upper limit of reference values of behaviour factors for systems regular in elevation

STRUCTURAL TYPE	Ductility Class	
	DCM	DCH
a) Moment resisting frames	4	$5\alpha_u/\alpha_1$
b) Frame with concentric bracings		
Diagonal bracings	4	4
V-bracings	2	2,5
c) Frame with eccentric bracings	4	$5\alpha_u/\alpha_1$
d) Inverted pendulum	2	$2\alpha_u/\alpha_1$
e) Structures with concrete cores or concrete walls	See section 5	
f) Moment resisting frame with concentric bracing	4	$4\alpha_u/\alpha_1$
g) Moment resisting frames with infills		
Unconnected concrete or masonry infills, in contact with the frame	2	2
Connected reinforced concrete infills	See section 7	
Infills isolated from moment frame (see moment frames)	4	$5\alpha_u/\alpha_1$

(2) If the building is non-regular in elevation (see **4.2.3.3**) the upper limit values of q listed in Table 6.2 should be reduced by 20 % (see **4.2.3.1(7)** and Table 4.1).

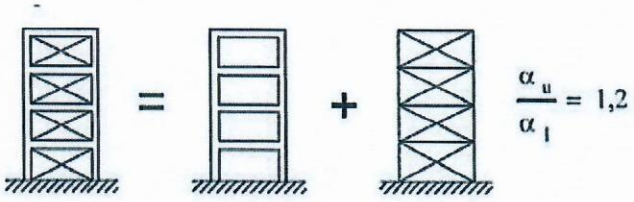


Figure 6.7: Moment resisting frame combined with concentric bracing (dissipative zones in moment frame and in tension diagonals). Default value for α_u/α_1 (see 6.3.2(3) and Table 6.2).