



قطب علمی مهندسی و مدیریت زیرساخت‌های دانشگاه تهران

مجموعه مقالات اولین کنفرانس ملی مهندسی و مدیریت زیرساختها

دانشگاه تهران - آبان ماه ۱۳۸۸

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**چکیده**

PERFORM 3D

**کلمات کلیدی**



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H1

H2

( )

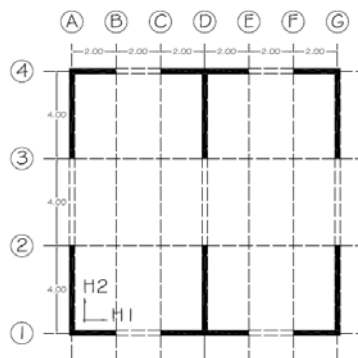
ETABS 9.20

:

6S ■

9S ■

12S ■



[ ] FEMA 273

H/L

[ ]

(Fiber section)

(Demand Capacity Ratio)

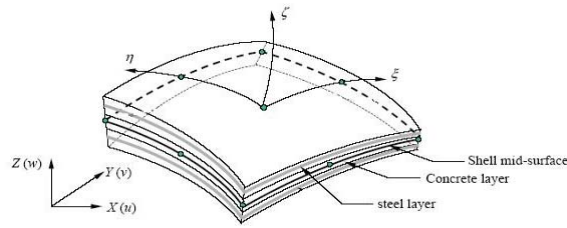
Shear Wall

Element

:

[ ]

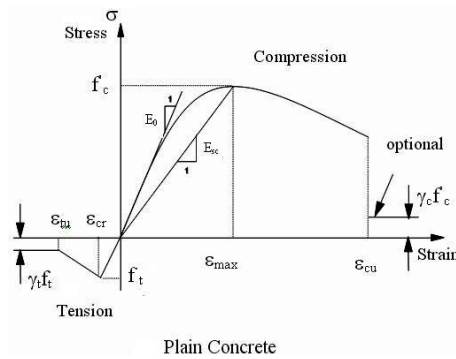
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(Out of plane)

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$$\sigma = \frac{E_0 \varepsilon}{1 + \left( \frac{E_0}{E_{sc}} - 2 \right) \left( \frac{\varepsilon}{\varepsilon_{max}} \right) + \left( \frac{\varepsilon}{\varepsilon_{max}} \right)^2} \quad (1)$$

$\varepsilon_{max}$        $\varepsilon$        $\sigma$        $E_{sc}$        $E_0$   
[ ]

$$\sigma = \sigma_c \left( \frac{\varepsilon}{\varepsilon_{max}} \right) e^{\left( 1 - \frac{\varepsilon}{\varepsilon_{max}} \right)} \quad (2)$$

(G)

[ ] ACI 318-05

[ ] FEMA 273

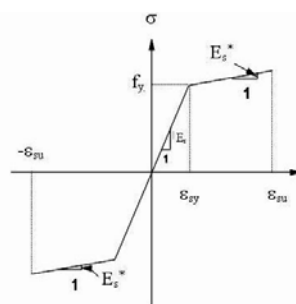
$\nu=0.25$

25 kg/cm<sup>2</sup>

G=0.4E

[ ]

0.25 (G)



[ ] FEMA 273

FEMA 273

( )

FEMA 273

(Equivalent Lateral Force) ELF

(Modal Compatible Distribution) MCD

(Uniform Load Distribution) ULD

FEMA 273

$Q_{G2}$   $Q_{G1}$

$$Q_{G1} = 0.9 Q_D \quad (3)$$

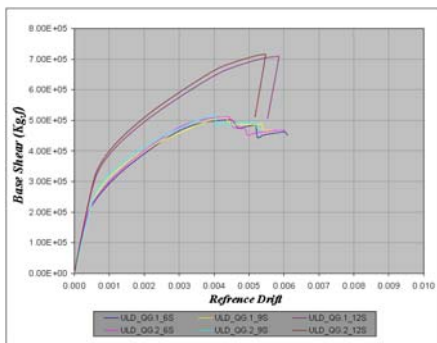
$$Q_{G2} = 1.1(Q_D + Q_L) \quad (4)$$

(Equivalent Linearization Procedure)

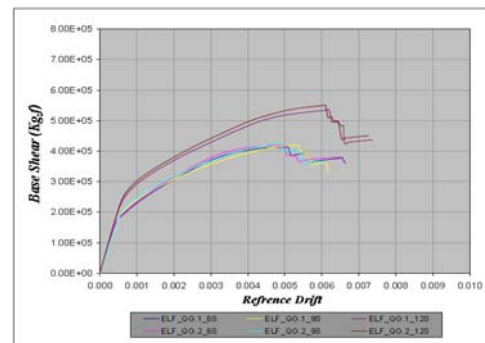
[ ] FEMA 440

(EPA=0.35g)

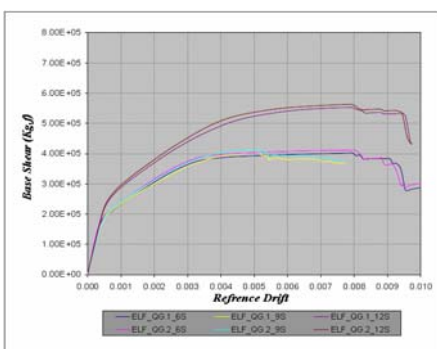
( $T_s = 0.5 S$ ) II



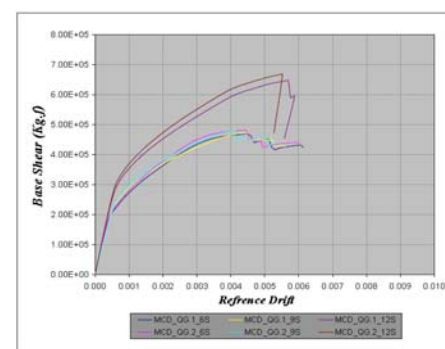
H1 (ULD) :



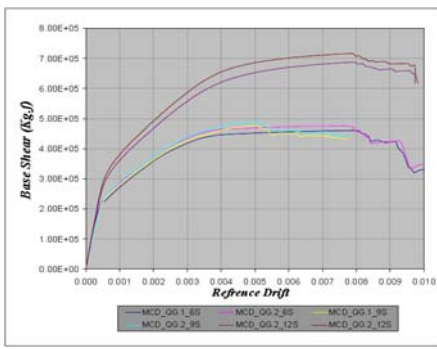
H1 (ELF) :



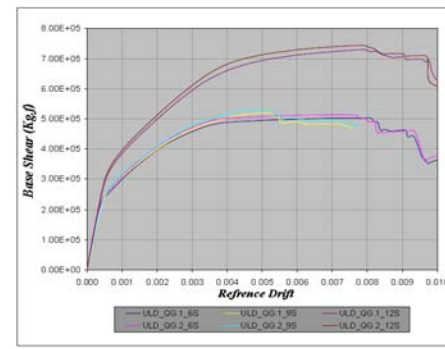
H2 (ELF) :



H1 (MCD) :



H2 (MCD) :



H2 (ULD) :

**DCR** :

**(MCD) 6S**

راستا	H1		H2	
بارثقلی	QG.1	QG.2	QG.1	QG.2
Target Drift	0.0009	0.0014	0.0007	0.0010
D/C	0.58	0.81	0.28	0.37
P. Level	(IO)	(IO)	(IO)	(IO)

**DCR** :

**(ELF) 6S**

راستا	H1		H2	
بارثقلی	QG.1	QG.2	QG.1	QG.2
Target Drift	0.0012	0.0017	0.0010	0.0013
D/C	0.60	0.80	0.35	0.45
P. Level	(IO)	(IO)	(IO)	(IO)

**DCR** :  
**(ELF)** **9S**

راستا	H1		H2	
بارتقلى	QG.1	QG.2	QG.1	QG.2
Target Drift	0.0019	0.0025	0.0019	0.0019
<i>D/C</i>	1.02	1.39	0.94	0.93
P. Level	(LS)	(LS)	(IO)	(IO)

**DCR** :  
**(ULD)** **6S**

راستا	H1		H2	
بارتقلى	QG.1	QG.2	QG.1	QG.2
Target Drift	0.0009	0.0011	0.0007	0.0009
<i>D/C</i>	0.55	0.70	0.28	0.34
P. Level	(IO)	(IO)	(IO)	(IO)

**DCR** :  
**(ULD)** **9S**

راستا	H1		H2	
بارتقلى	QG.1	QG.2	QG.1	QG.2
Target Drift	0.0014	0.0016	0.0012	0.0017
<i>D/C</i>	1.04	1.23	0.70	1.06
P. Level	(LS)	(LS)	(IO)	(LS)

**DCR** :  
**(MCD)** **9S**

راستا	H1		H2	
بارتقلى	QG.1	QG.2	QG.1	QG.2
Target Drift	0.0015	0.0022	0.0014	0.0019
<i>D/C</i>	1.05	1.62	0.84	1.11
P. Level	(LS)	(LS)	(IO)	(LS)

**DCR** :  
**(MCD)** **12S**

راستا	H1		H2	
بارتقلى	QG.1	QG.2	QG.1	QG.2
Target Drift	0.0015	0.0020	0.0014	0.0017
<i>D/C</i>	0.73	1.03	0.55	0.66
P. Level	(IO)	(LS)	(IO)	(IO)

**DCR** :  
**(ELF)** **12S**

راستا	H1		H2	
بارتقلى	QG.1	QG.2	QG.1	QG.2
Target Drift	0.0022	0.0025	0.0020	0.0022
<i>D/C</i>	0.74	0.87	0.65	0.69
P. Level	(IO)	(IO)	(IO)	(IO)

**DCR** :  
**(ULD)** **12S**

راستا	H1		H2	
بارتقلى	QG.1	QG.2	QG.1	QG.2
Target Drift	0.0013	0.0017	0.0012	0.0016
<i>D/C</i>	0.65	0.87	0.47	0.61
P. Level	(IO)	(IO)	(IO)	(IO)

(DCR)



H1 DCR 6S ( ) DCR  
 H2 H1  
 H2 H1 DCR  
 H2 H1 9S  
 (IO) (LS) (IO)  
 DCR 6S  
 6S  
 H2 9S 6S  
 H1  
 9S ( )  
 DCR 1.03  
 12S  
 9S 12S (IO)  
 9S  
 DCR  
 9S (IO) 12S 6S  
 (LS)

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([www.civilica.com/Paper-CESC13\\_015.html](http://www.civilica.com/Paper-CESC13_015.html))  
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