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2)

- SAP90, SAP2000

3)

4)

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1.

2.

가.

SAP2000N
3 SOLID
1,400

(,)

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(: ton)

	11	4	
	126.78	“	
	138.35	“	
	134	“	
	66.35	2	
(2)	60.66	4	

< 2>

	(t/ m ²)		(t/ m ²)	
	2.42x 10 ⁶	0.12	2.3	

(3.6m)

3>

< 3>

(: ton/ m²)

	0 - 3.6	(E.L 6.6m)	
	0 - 64.8	(E.L 6.6m)	36m x 3.6t/ m ² / m/ 2= 64.8t/ m ²
	200 ton	()	2 x 100ton=200ton

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+3.6kg/ cm²

- 6kg/ cm²

7.8kg/ cm²

(279kg/ cm²).

- 1) $= 0.25 \sigma_{ck} = 0.25 \times 279 = 69.75 \text{kg/ cm}^2$
- 2) $= 0.1 \times \quad = 0.1 \times 69.75 = 6.97 \text{kg/ cm}^2$
- 3) () $= 2.0 \sqrt{\sigma_{ck}} = 2.0 \sqrt{279} = 33.40 \text{kg/ cm}^2$
- 4) $= 0.42 \sqrt{\sigma_{ck}} = 0.42 \sqrt{279} = 7.01 \text{kg/ cm}^2$
- 5) () $= 0.25 \sqrt{\sigma_{ck}} = 0.25 \sqrt{279} = 4.17 \text{kg/ cm}^2$

$$6) \quad (\quad + \quad) = 0.25\sqrt{\sigma_{ck}} + 0.9\sqrt{\sigma_{ck}} = 1.15\sqrt{279} = 19.2\text{kg/cm}^2$$

$$7) \quad (\quad) = 0.53\sqrt{\sigma_{ck}} = 0.53\sqrt{279} = 8.85\text{kg/cm}^2$$

< 1 3 >

6.0kg/cm²

69.75kg/cm²

3.6kg/cm²

6.97kg/cm²

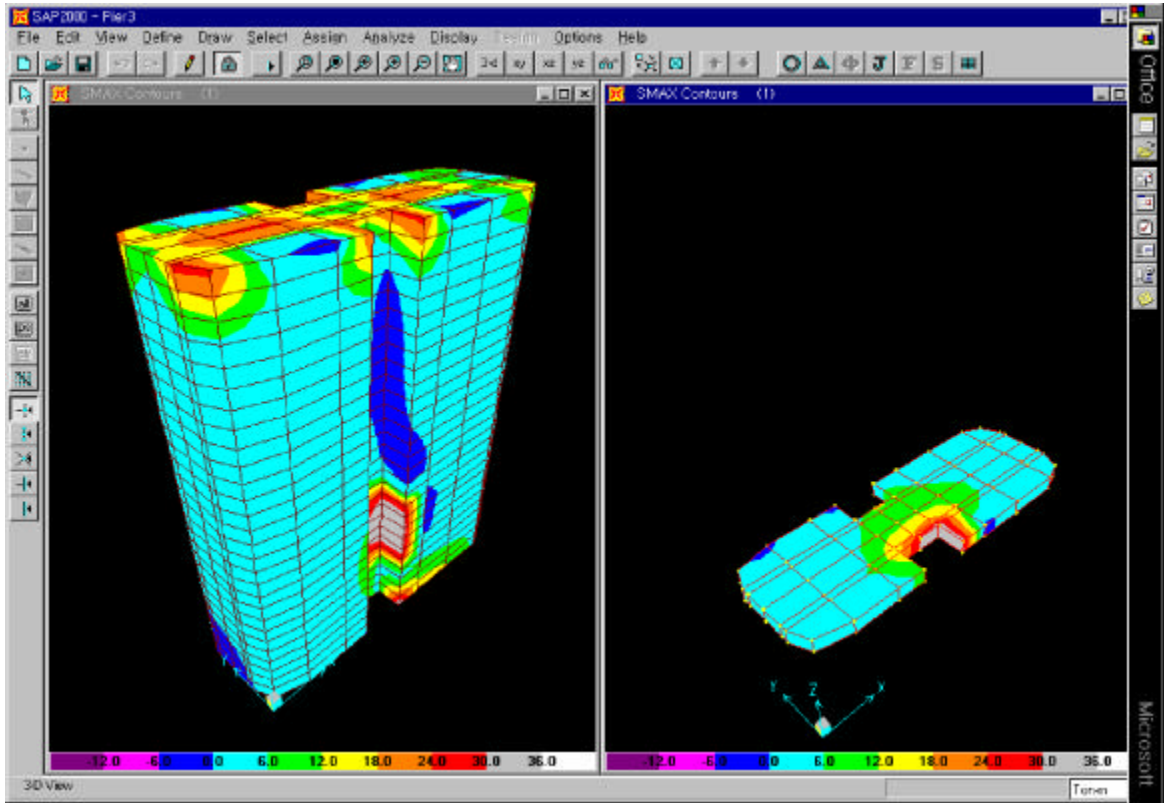
7.8kg/cm²

4.17kg/cm²

8.85kg/cm²

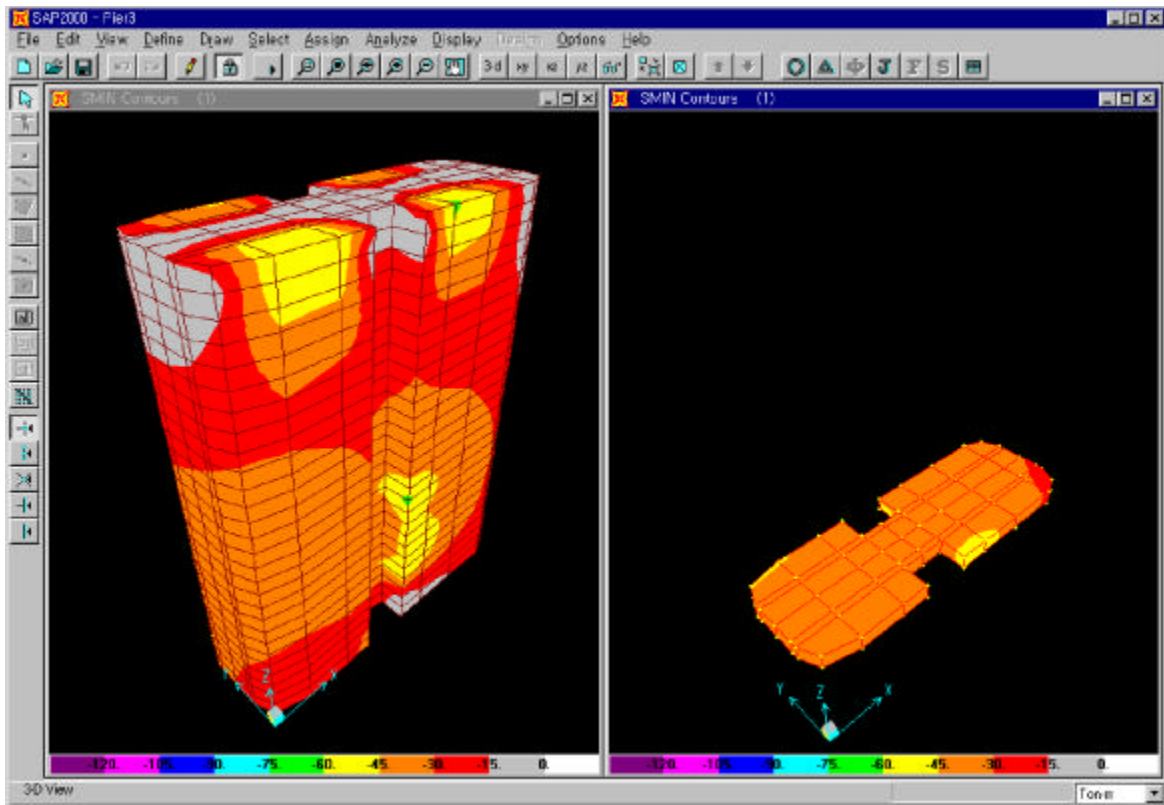
(7t ,)

19.2kg/cm²



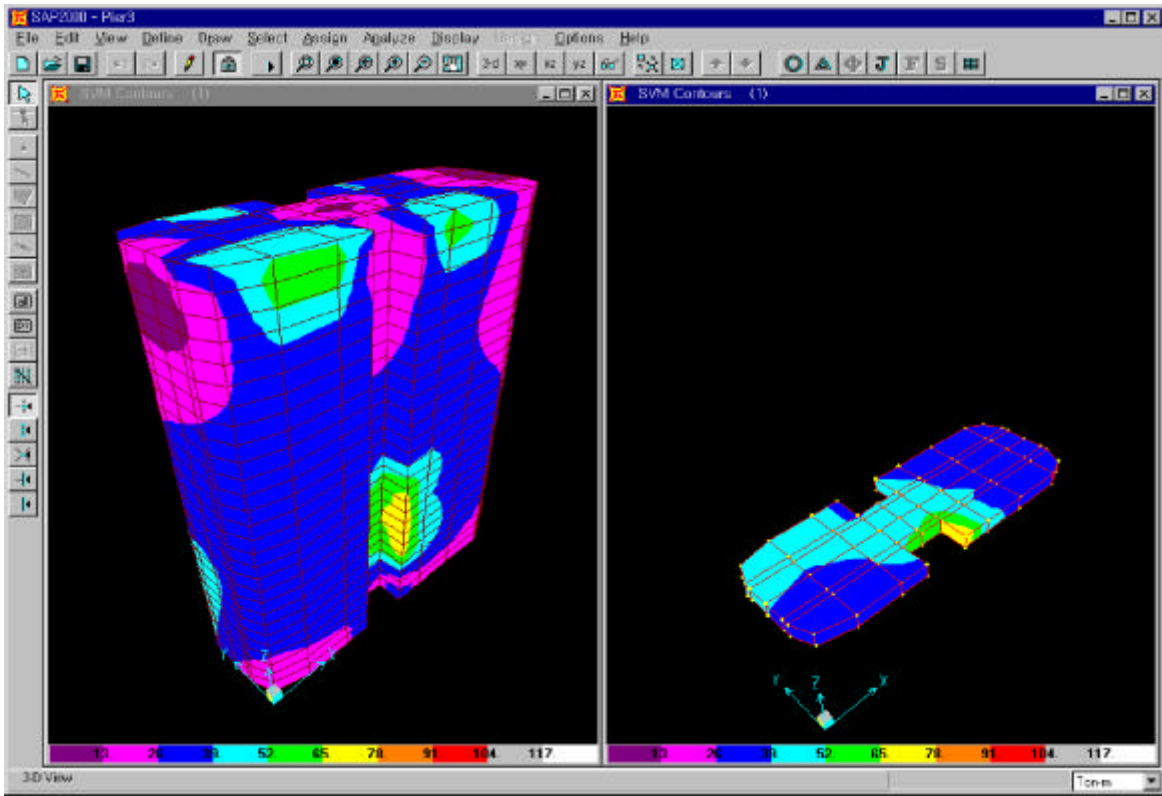
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1) 가

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- SAP90, SAP2000

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3 (Shell)

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(SAP2000N)

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- : (Shell Type Roller Gate)

- : 35.800B × 3.700H (×)

- : 132.737 Ton

- : SM41B

- : [: 25mm], [312 Shell]

- : [: 22mm], [210 Shell]

- : [: 22mm], [210 Shell]
- : [: 30mm], [245 Shell]
- (Diaphragm): [: 16mm], [15 × 42 Shell]

2) 2m

$$Q=A_1V_1=A_2V_2$$

$$(2m \times 35.8m) \times 4.2m/s = (3.5m \times 35.8m) \times V$$

$$V_2 = 2.4m/s$$

가

가 2m

2m

(300T on/s)

(4.2m/s)

3)

· : 1,000 DWT

: 160 T on

: W 14m × L30.72m × H2.2m

· : Momentum

$$F = m \times v / t \quad F : (160/9.8T on)$$

$$= 160/9.8 \times 2.4 / 1 \quad V : (2.4m/s)$$

$$= 39.2 T on \quad t : (1Sec)$$

4)

(Pw)

$$Pw = \rho \cdot hc \cdot A (35.8 \times 3.7 = 132.46)$$

$$= 1.0 \times 1.85 \times 132.46 = 245.51T on$$

2.

4

가 2m

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	132.8T on	· ()
	39.2T on	· · 4 (1.5m) 0.8m
	0.0T on	·

3.

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	4,100kg/ cm ²	(SM41B)
	2,400kg/ cm ²	
(E)	2.1 × 10 ⁶ kg/ cm ²	
	0.3	
	7.833T on/ m ³	

4.

(SM41B) (4,100kg/ cm²) 가
 . 가 32T on , Momentum
 39.2T on . 39.2T on
 가 , < 1 4>
 . < 1 4> + 4,380kg/ cm², - 2,500kg/ cm²,
 50kg/ cm² 3,650kg/ cm² .

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· (SM41B) $a=1,400\text{kg/cm}^2$ (900 1,500 kg/cm^2)
 [: $a=1,200\text{kg/cm}^2$]

· (SM41B) $c=1,400-24(\ /b-4.5)\text{kg/cm}^2$
 :
 b :

, $4.5 < \ /b < 30$ ($\ /b > 4.5$, $a=1,400\text{kg/cm}^2$)

· (SM41B) $a=800\text{kg/cm}^2$
 [: $a=700\text{kg/cm}^2$]

· $a=B/800$ ($B= :36$) = 45mm ()

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4,380 kg/cm^2 , (2,400 kg/cm^2)

630 kg/cm^2 (1,400 kg/cm^2)

2,500 kg/cm^2 (1,400 kg/cm^2)

(2,400 kg/cm^2) , 630 kg/

cm^2 (1,400 kg/cm^2)

50 kg/cm^2 ,

(800 kg/cm^2)

1,250 kg/cm^2

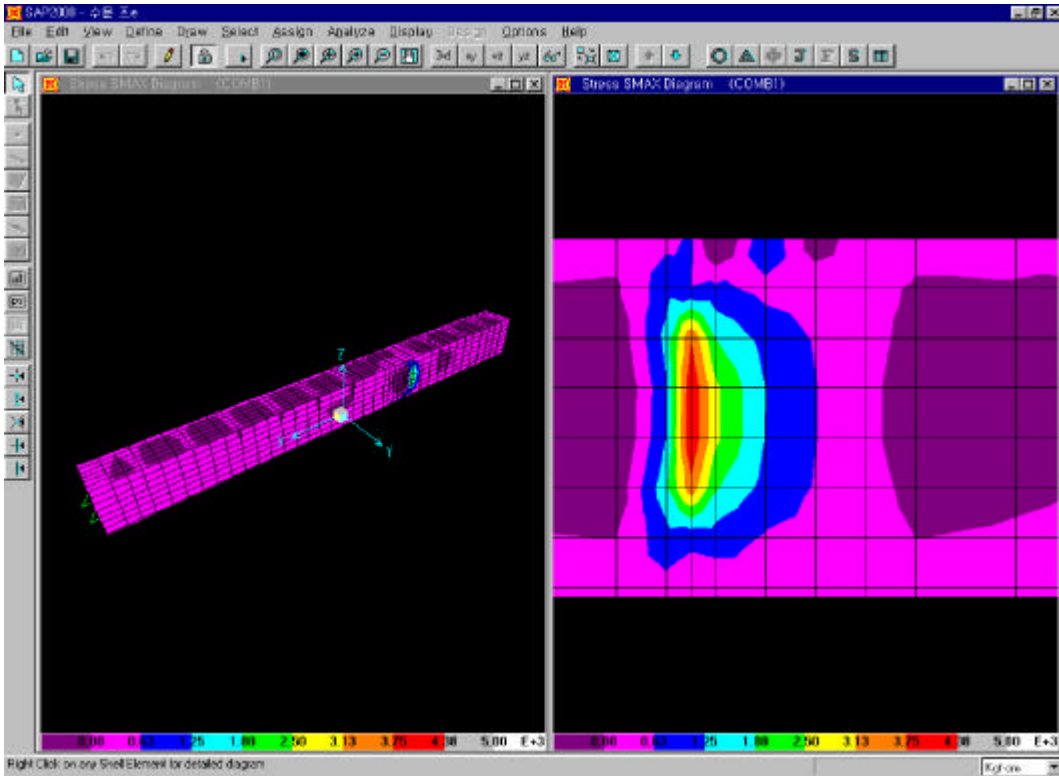
(1,400 kg/cm^2)

3,750 kg/cm^2

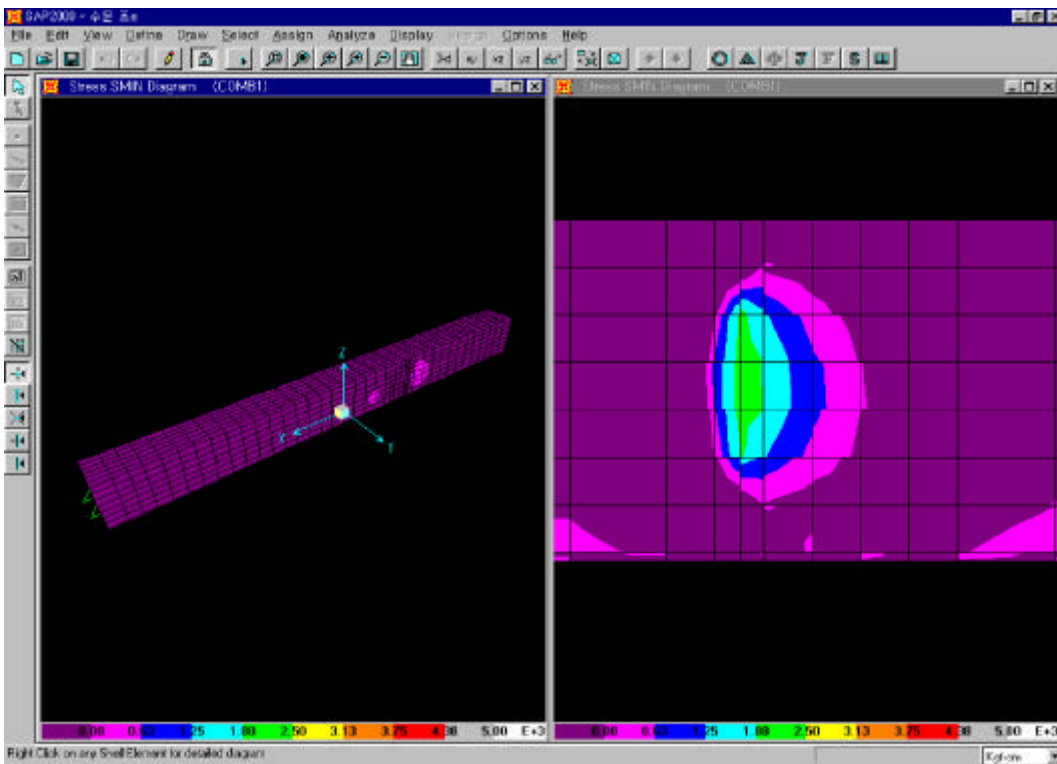
(2,400

kg/cm^2)

가

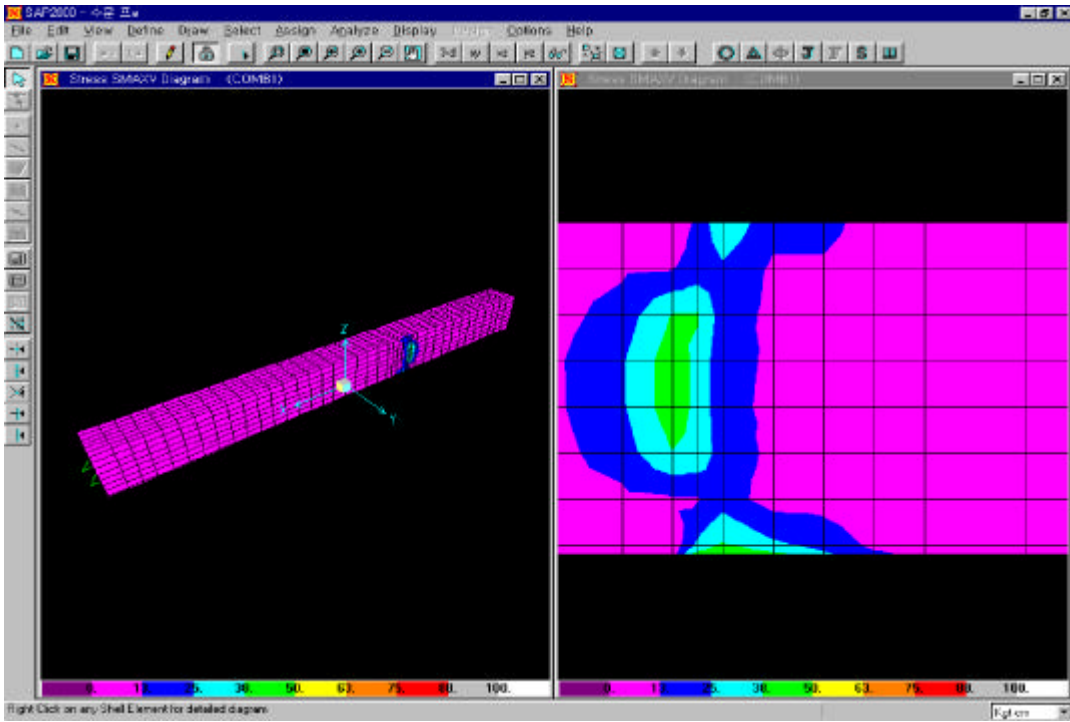


: 4,380kg/cm²()

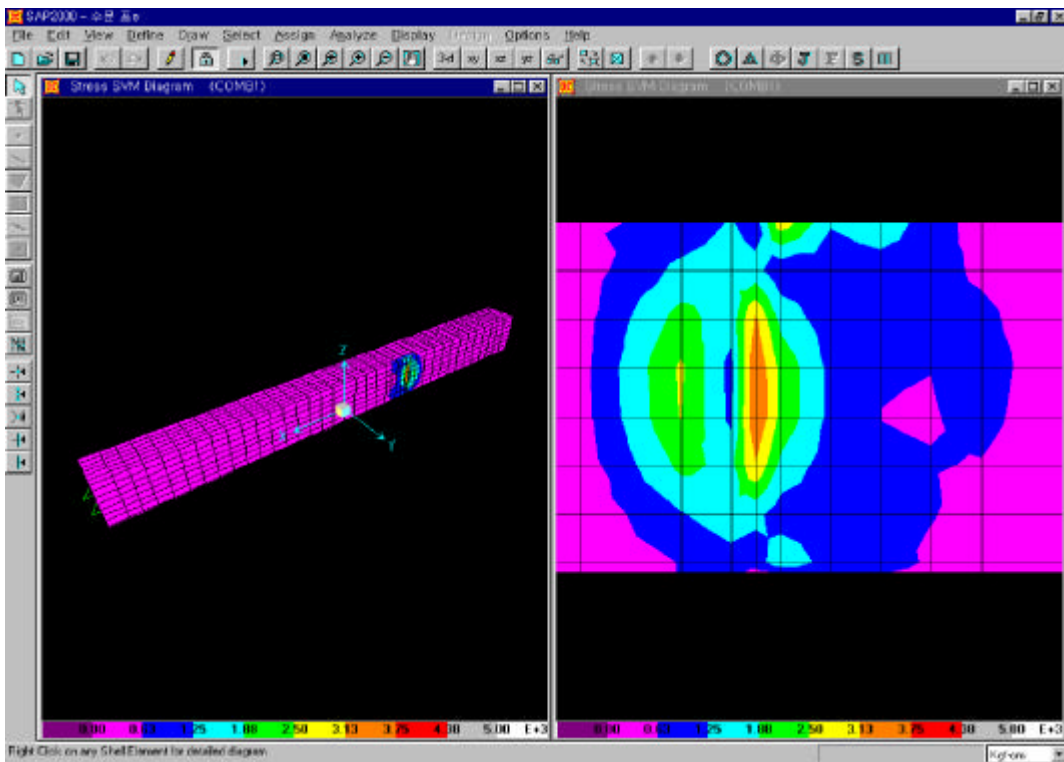


: 2,500kg/cm²()

< -2> ()



: 50 kg/cm^2 ()



: $3,750 \text{ kg/cm}^2$ ()

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- Hinge Side Roller

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