

2.

1990

.6)

1993

「資源節約再活用促進法律」

250

‘指定副産物’

EC 가

.2)

가

가

.7)

가

2000

50%

가

.3)

가

가

가

.4)

()

1994

6

()

.5)

()

1994 5

1991

1994 8

1993

, 가

가

.8)

2) Lauritzen, Erik K., "Demolition and Reuse of Concrete and Masonry", RILEM 3th International conference, Odense, 1993

3) Morel, A. and Gallias, J.L., "Development of demolition material recycling in France and Spain", Proceedings of International Recycling Congress REC 93, Geneva, 1993

4) Vyncke, J. and Rousseau, E., "Recycling of Construction and Demolition Waste in Belgium : Actual Situation and Future Evolution", Belgian Building Research Institute, Brussels, 1993

5) Wilson, Alex., "Cement and concrete: Environmental Considerations", Environmental Building News, 2(2), March/April 1993

6) Kasai, Y., "Guidelines and the present state of the reuse of demolished concrete in Japan", Narashino, 1993

7) " , "

” , 1997

8) 外, “ , 1995

(Pilot test)

			1994	1999
r				
2000	1	1		
55%		70%		

9)

1. (: %)

1998	1	1				
1999	12	31	60	50	35	-
2000	1	1				
2001	12	31	70	70	70	30
2002	1	1	75	75	75	50

3.

3.1

1997

4,425 m²

.10)

0.57m³

1.6 - 1.8t/m³
1997

$$4,425,000\text{m}^2 \times 0.57\text{m}^3/\text{m}^2 = 2,522,250\text{m}^3$$

$$2,522,250\text{m}^3 \times 1.7\text{t}/\text{m}^3 = 4,287,825\text{t}$$

, 1960 - 1970

20 - 30

가

1990

가

2,000

2 .11)

9) . , “ , 1999.7 ” ,

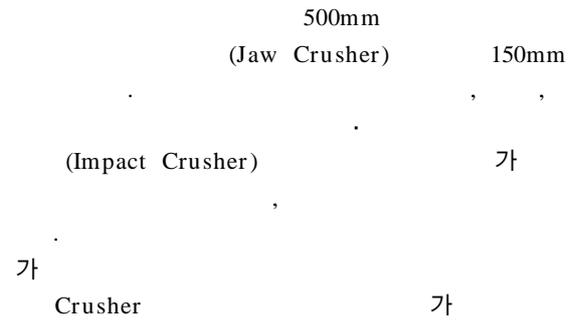
10) , “ , 1999.12., p.3 ” ,

11) “ (1)”, 1997.2, p.77. ”

2.

	2000	2002	2004	2006	2008	2010
(m ³)	3,622	4,318	5,050	5,505	5,837	5,507
()	2,737	3,012	3,287	3,562	3,837	4,112

3.2



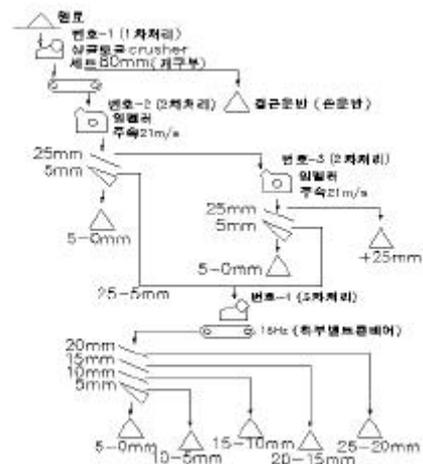
(100t/h)

1,2

(100t/h)
(磁選機)

3

가



1.

가

4.3

3

가

CO₂

1)

3. ()¹⁾

	(L/m ³)	(/kwh, /L)	(/m ³)
	0.5	518.5 ¹⁾	259
	0.5	518.5	259
	0.5	518.5	259
1	1.4	518.5	726
	0.7	518.5	363
	(kwh/t) 2.87	48.87 ²⁾	140
2	1.4	518.5	726
			2,733

1) (518.5 /L) : 1999 가 , (48.78 / kwh :) : 가 1999 9

2) 574kwh/ 200ton

3) 1 2

, 1 , 2 ,

2,733 /m³

4. ()

	(L/m ³)	(/kwh, /L)	(/m ³)
	0.5	518.5 ¹⁾	259
	0.5	518.5	259
	0.7	518.5	363
	(kwh/t) 2.87	48.87 ²⁾	140
			1,022

1,022 /m³

2) CO₂

CO₂

CO₂

CO₂

5. () CO₂

	CO ₂ (kg/L) ¹⁾	CO ₂ (kg/m ³)	(/kg) ²⁾	(/m ³)
	2.824	1,412	27.6	39
	2.824	1,412	27.6	39
	2.824	1,412	27.6	39
1	2.824	3,954	27.6	109
	2.824	1,977	27.6	55
	(kwh/t) 0.4778	1.371	27.6	38
2	2.824	3,954	27.6	109
		15.492		428

1) CO₂ - 2.824 kg/L() : IPCC , CO₂ , 0.4778 (224,445 × 10⁶ kwh)

kg/kwh : 997

2) 1999 가 \$23 27,600

CO₂

15.492kg/m³, 428 /m³

6. () CO₂

		CO ₂ (L/ m ³)	CO ₂ (kg/L)	CO ₂ (kg/ m ³)	(/kg)	(/ m ³)
		0.5	2.824	1,412	27.6	39
		0.5	2.824	1,412	27.6	39
		0.7	2.824	1,977	27.6	55
	(kwh/t)	2.87	0.4778	1,371	27.6	38
				6,172		170

CO₂

6.172kg/ m³, 170 /m³

4.4

CO₂

1)

7. ()

		(L/ m ³)	(/kwh, /L)	(/ m ³)
		0.5	518.5	259
		0.5	518.5	259
		0.7	518.5	363
	(kwh/t)	2.87	48.87	140
		1.4	518.5	726
				1,748

)

가

1,748 /m³

2) CO₂

CO₂

8 10.126kg/ m³, 279 /m³

8. () CO₂

		CO ₂ (L/ m ³)	CO ₂ (kg/L)	CO ₂ (kg/ m ³)	(/kg)	(/ m ³)
		0.5	2.824	1,412	27.6	39
		0.5	2.824	1,412	27.6	39
		0.7	2.824	1,977	27.6	55
	(kwh/t)	2.87	0.4778	1,371	27.6	38
		1.4	2.824	3,954	27.6	109
				10,126		279

4.5

가

1)

2000

가

9

9.

		(kg/ m ³)	(%)	(%)	(/kg)	(/ m ³)
		1,000	70	50	0	0
		1,000	70	50	0	0
						7,500

1)

1m³ Iton

2)

가 (1999)

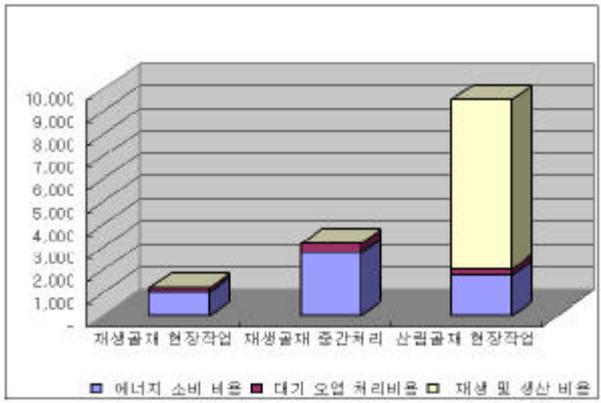
2)

(, CO₂)

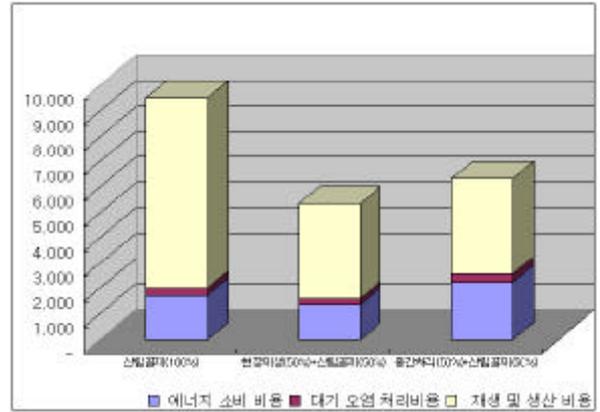
10.

(/ m³)

		1,022	2,733
		170	428
		0	0
		1,192	3,160
			9,527



2.



3.

1999

25mm

4)

- 8

3

2

3)

12

4

12.

	2000	2002	2004	2006	2008	2010
(m ³)	3,622	4,318	5,050	5,505	5,837	5,507
	70%	75%	75%	75%	75%	75%
(m ³)	2,535	3,239	3,788	4,129	4,378	4,130
가(/ m ³)	6,367	6,367	6,367	6,367	6,367	6,367
()	161	206	241	263	279	263

가

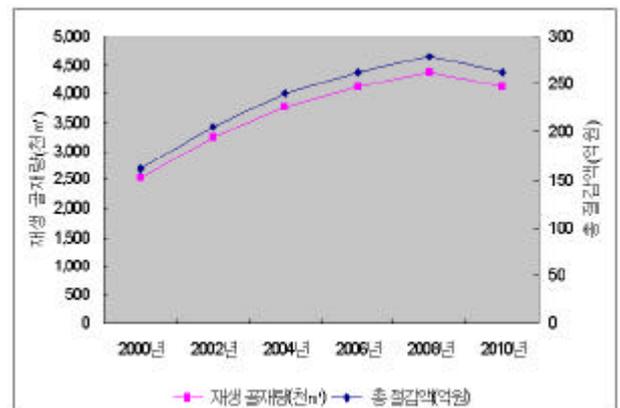
11

3

11.

	(100%)	(50%) (50%)	(50%) (50%)
	1,748	1,385	2,240
CO ₂	279	225	354
	7,500	3,750	3,750
	9,527	5,360	6,344

가



4.

13) , “ ” , 1999.12, pp. 21- 25

2004 2010 ,
 5,050 m³ 5,507 m³ ,
 75% ()
 3,788 m³ 4,130 m³ ,
 241

263

5.

가

1)

1,022 /m³, CO₂
 6.172kg/m³, 170 /m³

2)

1 , 2 ,
 2,733 /m³, CO₂ 15.492kg/m³,
 428 /m³

3)

1,748 /m³,
 CO₂ 10.126kg/m³, 279 /m³

4)

15 - 30 %

5) 2004 2010

5,050 m³ 5,507 m³ ,
 75% 3,788 m³
 4,130 m³ ,

241 263

6)

가

1)

가

2) 가

1. , “ ”, , 1997
2. , “ ”, , 1996
3. , “ (1)”,
 1997. 2
4. , “ ”, 9 6
 , 1997.12
5. , “ , 1996.6
6. , “ ”, 1995
7. , “ ”, , 1998
8. , “ ”,
 , 1999.12
9. , “ ”,
 , 2000.5
10. (), “ ”, 1995. 4
11. , “ 가
 ”, 1995.10
12. , “ ”,
 , 1996.11
13. , “ ”, 1995. 5
14. , “ (’95)”, 1996. 6
15. , “ 가 ()”, 1996. 7
16. , “ ”,
 , 1994, 1999
17. 日本建築學會關東支部, “建設副産物の再利用技術と今後の動向”, 1996. 3
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