



Ready-mixed concrete

1.

2004. 4. 1

2.

KS A 0021

KS F 2401

KS F 2402

KS F 2403

KS F 2405

KS F 2408

KS F 2409

()

KS F 2421

()

KS F 2449

KS F 2455

()

KS F 2504

KS F 2515

KS F 2526

KS F 2527

KS F 2534

KS F 2543

KS F 2544

KS F 2560

KS F 2561

KS F 2562

KS F 2563

KS F 2583

KS L 5103

KS L 5105

KS L 5201

KS L 5210

KS L 5211

KS L 5401

KS L 5405

KS M 0100

3.

3.1

KS L 5201, KS L 5210, KS L 5211, KS L 5401

3.2

가

KS F 2543, KS F 2544, KS F 2583

2515

, 0.04%

0.1%

가

, KS F 2526, KS F 2527, KS F 2534,

()

(NaCl)

가 KS F

. 0.04%

3.3

2

3.4

3.4.1

(,)

3.4.2

4.

1

○

가

(1)

(2)

(3)

(4)

(5) 5.2

(6)

(7) 3

(8)

(9)

(10) -

(11)

(12)

(13)

(14)

(1) (5)

1

| | mm | cm | MPa (=N/mm ²)(¹) | | | | | | | | | | | |
|--|--------|---------------------|---|----|----|----|----|----|----|----|----|-------------------------|-------------------------|---|
| | | | 18 | 21 | 24 | 27 | 30 | 35 | 40 | 45 | 50 | 4.0 (²) | 4.5 (²) | |
| | 20, 25 | 2.5, 6.5 | - | - | - | - | - | - | - | - | - | - | ○ | ○ |
| | | 8, 12, 15 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | - | - |
| | | 18 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | - | - | - | - |
| | | 21 | - | ○ | ○ | ○ | ○ | ○ | ○ | ○ | - | - | - | - |
| | 40 | 2.5, 6.5 | - | - | - | - | - | - | - | - | - | - | ○ | ○ |
| | | 5, 8, 12, 15 | ○ | ○ | ○ | ○ | ○ | - | - | - | - | - | - | - |
| | 15, 20 | 8, 12, 15 18, 21 | ○ | ○ | ○ | ○ | ○ | - | - | - | - | - | - | |

(¹)

(SI)

1kgf=9.8N

, 1MPa=10.2kgf/cm²가 .

(²) 4.0, 4.5 .

5.

5.1 , ,

(1) 9.4 (³)

(³) 28 , 가

(a) 1 가 (⁴) 85% .
 (b) 3 가 (⁴)
 (⁴) 1 0 MPa(=N/mm²) .

4.0, 4.5 4.00MPa, 4.50MPa .

(2) 2 .

2

: cm

| | |
|-------|------|
| 2.5 | ±1 |
| 5 6.5 | ±1.5 |
| 8 | ±2.5 |

(3)

3

3

: %

| | | |
|--|-----|------|
| | | |
| | 4.5 | ±1.5 |
| | 5.0 | |

5.2

0.30kg/ m³

0.60kg/ m³

(Cl⁻)

6.

7.

7.1

4.

5.

, , 10.

가

7.2

6

7.3

가

가

8.

8.1

8.1.1

(1)

(2)

가

(⁵).

1

(⁵)

가

(3)

(4)

가

8.1.2

(1)

(2)

8.2

가

(3)

(4)

(5)

가

8.1.3

(1)

(2)

8.3.2

(6).

KS F 2455

(6)

.....0.8%

.....5%

8.1.4

(1)

$\frac{1}{4}$ $\frac{3}{4}$

(7)

가 3cm 가

(7)

(2)

2.5cm

8.2

8.2.1

8.2.2

, 1

8.2.3

4

4

| | | |
|--|--|-----|
| | | 1 |
| | | 1 % |
| | | 3 % |
| | | 1 % |
| | | 2 % |
| | | 3 % |

8.2.4

, KS F 0021

$$m_0 = \frac{m_2 - m_1}{m_1} \times 100$$

, m_0 : (%)

m_1 : 1

m_2 :

8.3

8.3.1

8.1.3

8.3.2

KS F 2455

8.4

8.4.1

8.1.4

8.4.2

1.5

가

(⁸).

(⁸)

8.4.3

1

$\frac{1}{3}$ $\frac{2}{3}$
가 2cm

8.5

8.5.1

5.

8.5.2

가

9.

9.1

KS F 2401

30

50ℓ

9.2

KS F 2402

9.3

KS F 2421

KS F 2409

KS F 2449

9.4

KS F 2403

KS F 2405

KS F 2403

KS F 2408

9.5

(⁹)

1

, 10.4

가

(⁹)

6

9.6

KS F 2409

9.7

()

12cm

10.

10.1

10.2

150m³ 1

9.4

5.1(1)

1

1

3

10.3 4.

가

9.2

9.3

, 5.1(2) 5.1(3)

10.4

, 가 5.2

가

10.5 3.

가

11.

11.1

5

11.2 7.3

6

| | | | | | |
|--------------------|--|-------|--|--|-------|
| _____ No. _____ | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | m^3 | | | m^3 |
| | | | | | |
| | | | | | |
| (10) | | | | | |
| | | | | | |
| | | | | | |

A5(148×210mm)

(10)

1.

2.

2.1

2.2

KS F 2401

2.3

가

3.

KS M 0100 32. (CI)
KS M 0013

가

4.

2 ,

1. ()

2. , .

3. (1) , , , 가

(2) , , ())

(3) ,

(4)

(5) 가

(6) 105 110℃

(7)

4. , 2 .

| | |
|------|--|
| 2 | |
| (pH) | 5 2 5.8 8.5 500ppm 150ppm 10ppm |

5. 8.1

2

1

2 1

| | |
|--|----------|
| | |
| | 2g/ ℓ |
| | 1g/ ℓ |
| | 150ppm |
| | 30 , 60 |
| | 7 28 90% |

6.

6.1

8.2

2 2

4. 5.

2 2

| | |
|--|----------|
| | |
| | 150ppm |
| | 30 , 60 |
| | 7 28 90% |

6.2

3%

7.

4. 6.

8.

8.1

8.1.1

(1)

(2)

(3)

(4)

(5)

8.1.2

8.1.1 (1) (2)

(1)

(2)

2 (200ml 100ml 1), 1 , 1
 (10 20cm), 1 (10 20cm), 1 (500ml), , 1 ,
 1 , 1 .

8.1.3

- (1) 가 가
- 7
- (2) 1 4ℓ
- (3)

8.1.4

- (1)
- (a) 105 110℃
(W₁) 0.01g
- (b) 200Mℓ 105 110℃

- (2) (W₂) 0.01g 8.1.5
(S_d) KS A 0021

$S_d = (W_2 - W_1) \times 5$

S_d : (g/ℓ)

W₁ : (g)

W₂ : (g)

8.1.5

- (1)
- (a) 105 110℃
(W₃) 0.01g
- (b) 8.1.4(1)(b) 100Mℓ
- (c) 가
105 110℃ (W₄)
0.01g

- (2) (S_s) KS A 0021

$S_s = (W_4 - W_3) \times 10$

S_s : (g/ℓ)

W₃ : (g)

W₄ : (g)

8.1.6

1

8.1.7

- (1) (1) KS L 5103

(1)

- (2)

$$T_i = |T_{io} - T_{is}|$$

$$T_f = |T_{fo} - T_{fs}|$$

T_i : ()

T_{io} : ()

T_{is} : ()

T_f : ()

T_{fo} : ()

T_{fs} : ()

8.1.8

KS L 5105

(A) 5cm, 10cm (B)

A (5) , B

(1)

(a) 2,000g 0.5g

(b) 4.7 ℓ

125rpm, 140±5rpm, 62rpm, 140±5rpm,

(c) 5cm, 10cm

(d) 9mm

(2) 10 25℃ ,

4℃

(3)

(a)

(b)

KS F 2504

(4)

(a) 400g 800g 가

40

(°)가 190±5가

20

2

2

(°)

KS L 5105

2,000 2,500g

(b)

2

가

25

가

(c)

4 가

4

24

KS F 2403

(d)

7 28

4

KS F 2405

(5)

(R)

$$R = \frac{\sigma_{cr}}{\sigma_{co}} \times 100$$

R : (%)

σ_{co} : 7 28 (MPa)

σ_{cr} : 7 28

(MPa)

8.1.9

(1)

(2)

(3)

(4)

(5)

(a)

(b)

(c) (a) (b)

(6)

(a) (8.1.8 A B)

(b) (7 28)

(c) (7 28)

(d)

8.2

8.2.1

(1)

(2)

(3)

8.2.2

(1)

(2)

가

가

7

8.2.3

1

8.2.4

(1)

8.1.7

8.2.6

가 4.5% (°)

(°)

(2)

$Ti' : | Tio - Tis' |$

$Tf' : | Tfo - Tfs' |$

Ti' : ()
 Tio : ()
 Tis' : ()
 Tf' : ()
 Tfo : ()
 Tfs' : ()

8.2.5

(1) **8.1.8** , A
 338g, **8.2.6** 가 4.5%
 354g⁽⁴⁾, 338g
 , B 400g, **8.2.6**
 가 4.5% 419g, 400g
⁽⁴⁾

(2)

(R')

$$R' = \frac{\sigma_{er'}}{\sigma_{co}} \times 100$$

R' : (%)

α_o : 7 28 (MPa)

α_r' : 7 28 (MPa)

8.2.6

(1)

(a) 1,000g 0.1g
 (b) 500Mℓ
 (c) 500Mℓ
 (d) 500Mℓ

(2)

5 ℓ

(3)

(a) 500Mℓ (W) 0.1g
 (b) 105 110℃

(4)

(S) 0.1g

(Cs)

KS A 0021

$$C_s = \frac{S}{W} \times 100 - 0.2$$

C_s : (%)

W : (g)

S : (g)

0.2%

8.2.7

(1)

(2)

