

PRODUCT INFORMATION



花王株式会社
ケミカル事業ユニット
〒131-8501 東京都墨田区文花2-1-3

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URL=<http://chemical.kao.com/jp/>

Concrete admixture for high-strength MIGHTY 21WH

『MIGHTY21WH』 is an admixture of a new generation can contribute to various needs for concrete products. (※)

MIGHTY 21 series have a different chemical structure from other PCE polymer based superplasticizers. The PCE molecule used to long chain poly-ether what forms high effect of steric hindrance. As a result of this effect, it's possible to obtain very good "flowability".

MIGHTY 21WH is developed for "high-strength" concrete such as over 80N. This product has the best performance of "mixing speed" and "low viscosity" even in low water and high powder amount condition.

Product lineup of MIGHTY 21 series

| Product name | Applications |
|--------------|---|
| MIGHTY 21VS | Standard type: Generally ~ High strength concrete |
| MIGHTY 21HF | For high-flow concrete |
| MIGHTY 21WH | For high-strength concrete such as over 80N |

【Feature】

- Suitable of wide range from stiff-consistency to high-flow concrete
- Improve of molding condition because of good retention performance

【Property】

| | |
|-----------------------------------|------------------------------------|
| ○Composition | Polycarboxilic ether polymer |
| ○Aspect | Light brown liquid |
| ○pH | 5.5 ~ 7.5 |
| ○Density (g/cm ³ 20°C) | 1.07 ~ 1.09 |
| ○Standard use quantity (%/Powder) | 0.5 ~ 2.0 |

Concrete test

- Material

Cement : Silica fume cement (Density : 3.08g/cm³)

Fine aggregate : Land sand (Density : 2.61 FM : 2.64)

Coarse aggregate : Crush gravel (Density : 2.63 FM : 6.64)

- Mix design

| W/C (%) | S/a (%) | Unit quantity (kg/m ³) | | | | Dosage (C×%) |
|---------|---------|------------------------------------|-----|-----|-----|--------------|
| | | W | C | S | G | |
| 25.0 | 50.0 | 160 | 640 | 799 | 805 | 1.1 |
| 20.0 | 45.4 | 160 | 800 | 663 | 805 | 1.0 |

- Fresh condition

| W/C (%) | Concrete flow (mm) | | | Air (%) | Dosage (C×%) |
|---------|--------------------|--------|--------|---------|--------------|
| | Init. | 15 min | 30 min | | |
| 25.0 | 680 | 675 | 665 | 1.3 | 20.5 |
| 20.0 | 675 | 680 | 670 | 1.2 | 20.5 |

- Concrete property

| W/C (%) | Steam curing (N/mm ²) | | | Standard curing (N/mm ²) | | |
|---------|-----------------------------------|--------|---------|--------------------------------------|--------|---------|
| | 1 day | 7 days | 28 days | 1 day | 7 days | 28 days |
| 25.0 | 31.5 | 55.2 | 92.4 | 12.3 | 59.5 | 102.5 |
| 20.0 | 47.6 | 68.8 | 103.5 | 19.2 | 78.0 | 117.7 |

Curing condition

Steam: Pre curing 20°C 2hours → 65°C 3hours → 20°C(in water)

Standard: Air curing 1d → water curing

Kao Corporation

Construction sales department

2-1-3, Bunka Sumida-ku, Tokyo, 131-8501, Japan Tel: (+81)-3-5630-7650