

MIRA[®] 107

Mid-range water-reducing admixture

Product Description

MIRA[®]107 is a mid-range water reducer specifically formulated to produce concrete with dramatically enhanced water reduction and slump retention with only slight to moderate retardation. Effective through a wide addition rate range, MIRA 107 combines the benefits of normal and high range water reducers allowing for the ultimate control of the concrete's placing and finishing properties.

MIRA 107 is an aqueous solution of complex organic compounds, each of which contributes uniquely to the concrete's final properties. It contains both patented dispersing and finishability agents that provide performance superior to conventional water-reducing products.

MIRA 107 is manufactured under rigid controls which provide uniform, predictable performance and contains no calcium chloride. Supplied as a dark brown, low viscosity liquid, it complies with the requirements of BS 5075, Part 1, BS 5075, Part 3, SS 320 : 1987.

One litre weighs approximately 1.24kg \pm 0.02kg.

Features

When MIRA 107 is used within its normal dosage range, the following concrete features are observed:

- Delayed initial and final set of the concretes (typically 1-5 hours).
- Reduction of the concrete mix water by typically 5-15%.
- Improved slump retention.
- Enhanced pumpability and finishability.

Product Advantages

- Superior strength performance
- Excellent slump control
- Ultimate workability and finishability
- Improved concrete rheology

Applications

MIRA 107 enables concrete to be produced with lower water content, improved placement properties, and enhanced slump life which yields a less permeable and more durable concrete.

MIRA 107 is used in ready mix, job site, and concrete paving plants for normal and lightweight concrete and in block and precast plants. It is particularly effective in lean or fly ash and slag compensated mixes.

MIRA 107 also imparts “slickness” to the surface of the concrete making it most appropriate for concrete flatwork as well as slip form work.

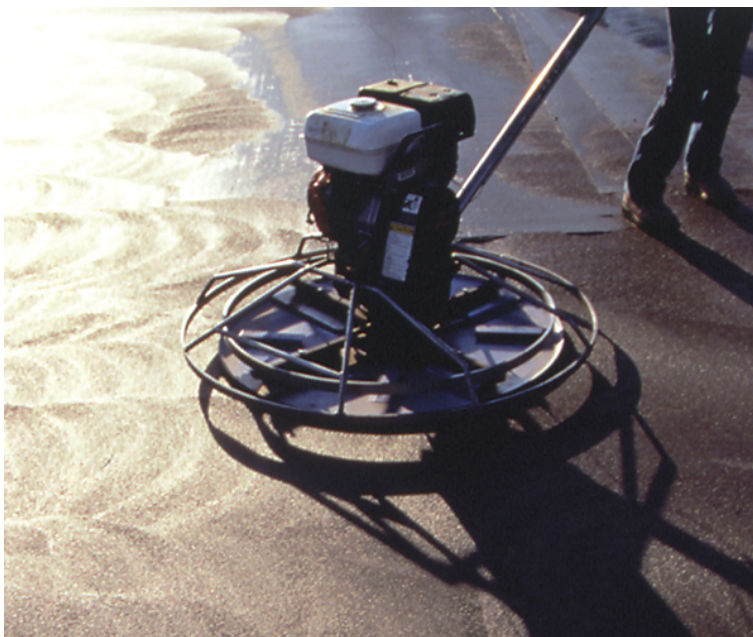
Addition Rate

MIRA 107 can be dosed at between 200 and 600mL / 100kg of cementitious material. Optimum addition rate depends on the other concrete mixture components, job conditions, and desired performance characteristics.

Overdosing of MIRA 107 will produce an increase in workability, air content and setting time. The set retardation effect will vary, dependent on ambient temperatures, cement used, and amount of overdose. However, provided correct curing procedures are followed, ultimate concrete strengths will be higher than a corresponding mix or standard admixture dose concrete.

Health and Safety

See MIRA 107 Material Safety Data Sheet or consult GCP Applied Technologies.



Advantages

MIRA 107 offers significant advantages over conventional water reducers. Laboratory and field work has consistently demonstrated:

Superior Strength Performance

The water reduction properties, (5–15% water reduction) and dispersion characteristics allow the moderate cement content concretes to achieve lower water to cement ratios. The combined effect is increased compressive and flexural strengths at all ages, and lower heat of hydration.

Excellent Slump Control

MIRA 107 is particularly effective at the slump range of 100–150mm, where the traditional superplasticisers have difficulty in maintaining good slump retention.

Ultimate Workability and Finishability

Formulated with a unique combination of workability and finishenhancing agents, MIRA 107 enables concrete to achieve superior slump retention and internal cohesiveness, providing a less “sticky” concrete with improved placement properties. Floating and trowelling, by machine or by hand, easily imparts a smooth, close tolerance surface with less machine time and labour.

Improved Concrete Rheology

MIRA 107 provides excellent slump retention and improved rheology throughout its dosage range. This allows for increased water reduction and increased slump without significantly extended setting times. It also provides the flexibility to vary addition based on specific job and weather requirements.

Compatibility

MIRA 107 is compatible with all Portland cement systems, including fly ash, slag and limestone blends. It is also compatible with all GCP admixtures currently available, but should be added to the mix separately, and not premixed prior to addition. Due to a synergistic effect with MIRA 107, the amount of air entrainer may be reduced by 25 to 50% when added to concrete with MIRA 107. Each admixture should be added to the concrete separately.

Dispensing Equipment

Please contact your local GCP representative for further information regarding the dispensing equipment for this product.

Packaging and Storage

MIRA 107 is available in bulk, delivered in tank trucks, and 205L drums. MIRA 107 contains no flammable ingredients. It will freeze at approximately -2°C but will return to full strength after thawing and thorough mechanical agitation. Shelf life is 12 months.

gcpat.vn | For technical information: asia.enq@gcpat.com

Australia 1800 855 525 New Zealand +64 9 448 1146 China Mainland +86 21 3158 2888 Hong Kong +852 2675 7898 India: Chennai +91 44 6624 2308 Manesar +91 124 488 5900 Indonesia +62 21 893 4260 Japan +81 3 5226 0231 Korea +82 32 820 0800 Malaysia +60 3 9074 6133 Philippines +63 49 549 7373 Singapore +65 6265 3033 Thailand +66 2 709 4470 Vietnam +84 8 3710 6168

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GCP Applied Technologies Inc., 2325 Lakeview Parkway, Alpharetta, GA 30009, USA

GCP Vietnam Company Ltd, Lot B14, Section B, Street No. 12, Xuan Thoi Son Small Scale Arts & Crafts Group, National Road 22Xuan Thoi Son Village, Hoc Mon District, Ho Chi Minh City

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