

CHEMFIT RAPIDSET HA300

Hardening Accelerator – For Early Strength Structural Concrete

PRODUCT DESCRIPTION

ChemFit RapidSet HA300 is a high-performance, non-chloride hardening accelerator specifically formulated to accelerate the setting time and early strength development of concrete. This advanced admixture significantly reduces initial and final set times while promoting rapid strength gain without compromising ultimate strength or durability. Unlike traditional accelerators, **ChemFit RapidSet HA300** contains no added chlorides, making it completely safe for use in reinforced and prestressed concrete structural elements.

PRIMARY APPLICATIONS

ChemFit RapidSet HA300 is recommended for use in conditions such as:

- Early strength structural concrete requiring rapid load-bearing capacity
- Cold weather concreting (temperatures below 10°C)
- Rapid formwork stripping and reuse
- Precast concrete production with high turnover requirements
- Emergency repairs and infrastructure rehabilitation
- Road and bridge repairs requiring quick reopening to traffic
- Tunnel linings and shotcrete applications
- Foundation pours in cold conditions
- Slab-on-grade construction requiring early finishing
- Concrete for winter construction projects
- Prestressed concrete elements requiring early transfer of prestress

KEY FEATURES AND BENEFITS

- **No added chlorides** – Completely safe for reinforced and prestressed concrete (non-corrosive)
- **Accelerates setting time** – Reduces initial set by 30-60% and final set by 25-50% depending on dosage and temperature
- **Rapid early strength gain** – Achieves 150-300% of control strength at 12-24 hours
- **Improves cold weather performance** – Enables concrete placement and strength gain at temperatures down to 0°C
- **Reduces formwork cycle time** – Allows for faster stripping and reuse of forms (savings of 8-24 hours per cycle)
- **No adverse effect on ultimate strength** – Maintains or slightly improves 28-day and later strengths

- **Compatible with all cements** – Works with OPC, PPC, PSC, and blended cements
- **Compatible with other admixtures** – Works with water reducers, superplasticizers, air entrainers, and retarders
- **Liquid form** – Easy to dispense and batch accurately
- **Improved finishing characteristics** – Enhances surface finish and reduces bleeding
- **Cost-effective** – Reduces cold weather protection costs and accelerates construction schedules

PHYSICAL AND CHEMICAL PROPERTIES

| Property | Specification |
|--------------------------------|--|
| Appearance | Clear to slightly hazy liquid |
| Color | Light amber to straw-colored |
| Specific Gravity | 1.18 – 1.28 at 25°C |
| pH Value | 8.0 – 10.0 |
| Chloride Content | Nil ($\leq 0.05\%$) – No added chlorides, non-corrosive to rebar |
| Alkali Content | < 1.5% |
| Freezing Point | -5°C |
| Set Time Reduction (Initial) | 30 – 60% vs. control at 20°C |
| Early Strength Gain (12-24 hr) | 150 – 300% of control (depending on dosage & temperature) |
| Ultimate Strength Effect | Neutral to +5% at 28 days |

PACKAGING AND STORAGE

Packaging:

- 200 L drums
- 1000 L IBCs (Intermediate Bulk Containers)

Storage:

- Store in original sealed containers at +5°C to +35°C
- Protect from direct sunlight, frost, and extreme heat
- Keep container tightly closed when not in use
- If frozen, thaw completely and agitate before use (product quality remains intact)

Shelf life:

- 12 months from date of manufacture

DOSAGE AND COVERAGE RATES

The recommended dosage of **ChemFit RapidSet HA300** is **0.5% to 1.5% by weight of cementitious material**.

- **Low dosage (0.5% – 0.8%):** Provides moderate acceleration (25-35% set reduction) for mild cold weather or slightly faster stripping requirements
- **Medium dosage (0.8% – 1.2%):** Delivers standard acceleration (40-50% set reduction) for cold weather concreting and early strength requirements
- **High dosage (1.2% – 1.5%):** Produces maximum acceleration (50-60% set reduction) for rapid repairs, emergency work, or extreme cold conditions (down to 0°C)
- **Per 50 kg cement bag:** Dosage ranges from 0.25 to 0.75 kg (approximately 220 to 650 ml) per bag
- **Yield per 200 L drum:** Approximately 530 to 1,600 bags of cement (26 to 80 tons of cement), based on 1.0% dosage
- **Yield per 1000 L IBC:** Approximately 2,650 to 8,000 bags of cement (132 to 400 tons of cement), based on 1.0% dosage

NOTE: Concrete trial mixes shall be carried out to confirm optimal dosage for specific project requirements. For cold weather concreting below 10°C, higher dosages (1.0% – 1.5%) are recommended. For temperatures below 5°C, use heated mixing water (30-40°C) and protect concrete from freezing. Accelerator effectiveness decreases as temperature decreases; adjust dosage accordingly.

APPLICATION GUIDLINES

ChemFit RapidSet HA300 should be added directly to the mixing water or to the concrete during batching. For best results, add the admixture to the mixing water before combining with cement and aggregates to ensure uniform distribution. The concrete should be mixed for a minimum of 2 to 3 minutes to ensure uniform dispersion of the admixture. This product is compatible with all standard Portland cements, blended cements, and most supplementary cementitious materials such as slag, fly ash, and silica fume.

ChemFit RapidSet HA300 is compatible with most concrete admixtures including water reducers, superplasticizers, air entrainers, and retarders; however, avoid combining with high dosages of retarders as they may counteract the acceleration effect. Do not premix with other admixtures in concentrated form; add separately to the mix. If overdosed (above 2.0%), flash setting or excessive heat generation may occur, potentially leading to thermal cracking in mass concrete; reduce dosage in subsequent batches. For cold weather concreting, use heated mixing water (not exceeding 60°C) and provide adequate curing protection (insulating blankets or enclosures) for the first 24-48 hours. For rapid formwork stripping, test concrete strength before stripping to ensure adequate load-bearing capacity. For prestressed concrete, ensure sufficient strength is achieved before transfer of prestress.

HEALTH AND SAFETY

ChemFit RapidSet HA300 may cause mild to moderate eye and skin irritation. If eye contact occurs, rinse thoroughly with water for 15 minutes and seek medical advice if irritation persists. For skin contact, wash with soap and water. If swallowed, do not induce vomiting; instead rinse the mouth and drink water, then seek medical advice immediately. Use nitrile gloves, goggles, and protective clothing during handling. Ensure adequate ventilation when using in enclosed spaces. Refer to the Safety Data Sheet for detailed information.

CLEANSING OF TOOLS

Clean all batching equipment, measuring containers, and spillages with water immediately after use. Dried or cured material may require mechanical removal.

APPROVALS AND STANDARDS

ChemFit RapidSet HA300 conforms to the following standards:

- **ASTM C494 / C494M** – Type C (Accelerating Admixture)
- **No added chlorides** – Safe for reinforced and prestressed concrete per **ACI 318** requirements

LEGAL NOTES

All technical data provided in this Product Data Sheet is based on laboratory testing under controlled conditions. Actual field performance may vary due to differences in substrates, application methods, site conditions, and environmental factors. ChemFit makes no warranty of merchantability or fitness for a particular purpose. Users shall conduct their own trials to validate product suitability for the intended application. ChemFit reserves the right to modify product specifications without prior notice. For the most current documentation, request the latest Product Data Sheet and Safety Data Sheet from ChemFit.

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