

PRODUCT DATA SHEET

Sika® ViscoCrete® ACE 401

(formerly MasterGlenium® ACE 401)

High range water reducer / superplasticiser

DESCRIPTION

Sika® ViscoCrete® ACE 401 is a concrete admixture used as high range water reducer or superplasticiser. It is optimized for applications where the time between concrete mixing and placement is short, such as in precast concrete production. In this instance, the workability life of the concrete is optimized to give a balance between maintaining the workability while still enabling the early onset of the strength development process. The unique molecular configuration of the Product enables rapid cement hydration. Robustness and controlled workability retention are distinct features of the precast concrete produced with this Product.

USES

is used for:

- Economic, eco-friendly and ergonomic production of concrete mixes with highly workable, non-segregating concrete utilizing low water cement ratios
- High early and final strength gains
- Precast concrete
- Concrete on-site requiring fast stripping time
- Concreting in cold weather

is used in:

- All consistencies, including Self-Compacting Concrete (SCC)

CHARACTERISTICS / ADVANTAGES

- Enables concrete mixes with low water-cement ratio and eco-friendly, CO₂-reduced mix designs
- Improves flowability
- Enables low-energy placing and compacting
- Enhances robustness and consistency in concrete quality with low stickiness
- Improves surface finishing
- Achieves high early strengths

- Eliminates or minimizes heat curing
- Increases productivity, reduces cycle time
- Promotes high density and high final strength
- Improves surface appearance and durability of concrete
- Reduces shrinkage, creep, and water permeability
- Free of chlorides, low alkali content
- Suitable for use in reinforced and pre-stressed concrete
- If used in conjunction with Sika®Rapid® concept, cycle times can be further reduced, and temperature curing regimes can be further reduced or even eliminated

APPROVALS / STANDARDS

IS 9103, ASTM C494 Type F, G

PRODUCT INFORMATION

Chemical base	Aqueous solution of modified polycarboxylates
Packaging	245kg Refer to the current price list for available packaging variations.
Shelf life	12 months from date of production
Storage conditions	The Product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5 °C and +30 °C. Protect from direct sunlight and frost. Always refer to the packaging. Frost: If frozen or if precipitation has occurred, the Product may be used after thawing slowly at room temperature and intensive mixing.
Appearance / Colour	Light to dark reddish brown liquid
Density	1.070 ± 0.02 at 25°C
pH-value	≥ 6

TECHNICAL INFORMATION

Concreting Guidance	<ul style="list-style-type: none">Follow the standard rules of good concreting practice for both production and placement.Carry out laboratory trials before concreting on site, especially when using a new mix design or producing new concrete components.Carry out trials to confirm the flowability and workability of the concrete.Cure fresh concrete properly and apply curing as early as possible, particularly in hot, windy and dry conditions, as well as at low temperatures.
Specific Advice	<ul style="list-style-type: none">Excessive water addition or overdosing may cause bleeding or segregation.Due to the Product's high early characteristics, slump life is limited and proper care and timing during placement should be taken.

SYSTEM INFORMATION

Compatibility	The Product is compatible with all standard cement types. For use with other cements contact your local Sika technical service for information. The Product can be combined and is recommended for use with other Sika products, such as: <ul style="list-style-type: none">SikaRapid® hardening acceleratorsSika® Stabilizer workability improverSikaControl® durability and quality enhancerSika® Separol® mould release agentsSika® Antisol® curing compounds The Product is not compatible with admixtures from the Sikament® range. Always conduct trials before combining different products. Contact Sika Technical Services for additional information.
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APPLICATION INFORMATION

Recommended Dosage	0.3% to 1.8% by weight of cement. The dosage rates given above are for typical usages, they are not meant as absolute limits, as other dosages may be utilized in special cases according to specific job conditions. Note: Preliminary laboratory trials are always recommended to determine the optimum consumption and injection parameters. Contact Sika Technical Services for additional information.
Dispensing	Sika® ViscoCrete® ACE 401 is a ready-to-use liquid which is dispensed into the concrete together with the mixing water. The plasticising effect and water reduction are higher if the admixture is added to the damp concrete after 50 to 70% of the mixing water has been added. The addition of Sika®

ViscoCrete® ACE 401 to dry aggregate or cement is not recommended. Thorough mixing is essential and a minimum mixing cycle, after the addition of the Sika® ViscoCrete® ACE 401, of 60 seconds for forced action mixers is recommended.

Compatibility

Sika® ViscoCrete® ACE 401 is compatible with most of the Sika products. Use Sika Stabilizer as viscosity modifying agent in self compacting concrete. It must not be used in conjunction with any other admixture unless prior approval is received from Sika Technical Services Department.

BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

FURTHER DOCUMENTS

CORROSIVITY – NON CORROSIVE

Sika® ViscoCrete® ACE 401 admixture will neither initiate nor promote corrosion of reinforcing steel embedded in concrete, prestressed concrete or concrete placed on galvanized steel floor and roof systems. Neither calcium chloride nor any calcium chloride-based ingredients are used in the manufacture of Sika® ViscoCrete® ACE 401 admixture. In all concrete application, Sika® ViscoCrete® ACE 401 admixture will conform to the most stringent or minimum chloride ion limits currently suggested by construction industry standards and practices.

WORKABILITY

Sika® ViscoCrete® ACE 401 ensures that rheoplastic concrete remains workable for a long time. Workability loss is dependent on temperature, and on the type of cement, the nature of aggregates, the method of transport and initial workability. It is strongly recommended that concrete should be properly cured particularly in hot, windy and dry climates.

To achieve longer workability period please use Sika Plastiment as retarder. It is strongly recommended that concrete should be properly cured particularly in hot, windy and dry climates.

ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

MIXING

The Product is a ready-to-use liquid that is added to the concrete during the mixing process. Optimal water reduction is obtained if the Product is dispensed into the concrete mix after the addition of 50–90 % of mixing water. Avoid adding the Product to dry materials. The Product should not be pre-mixed with other admixtures. If other admixtures are to be used in concrete containing the Product they must be dispensed separately.

After adding the Product allow enough mixing time to secure a homogenous concrete. If necessary, continue mixing and add additional Product to obtain the required workability.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

Sika India Pvt. Ltd.

620, Diamond Harbour Road
Commercial Complex II
Kolkata - 700 034
West Bengal, India

Contact:

Phone: +91 33 2447 2448
Fax: +91 33 2397 8688
info.india@in.sika.com
www.sika.in



Product Data Sheet

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