

PRODUCT DATA SHEET

SikaGrind® ES 2351

(formerly MasterCem® ES 2351)

HIGH PERFORMANCE EARLY STRENGTH ENHANCER FOR CEMENTS

DESCRIPTION

SikaGrind® ES 2351 is a highly effective early strength enhancer and formulated with high end raw materials to guarantee superior performance of the product.

SikaGrind® ES 2351 is an aqueous modified alkanolamine mixture.

SikaGrind® ES 2351 is compatible with all types of cement. It complies with ASTM C465-99 as a non-harmful processing additive and EN197-100.

USES

- Ordinary Portland cement.
- Blended cement with limestone, fly ash or slag.
- The special characteristics of SikaGrind® ES 2351 effectively activate the hydration process between cement particles and the non-reactive or reactive fillers.
- For additional information on SikaGrind® ES 2351 and its use in developing special performance characteristics, contact your local Master Builders Solutions Sales field representative.

FEATURES

SikaGrind® ES 2351 considerably increases cement early strength better than conventional grinding aids or early strength enhancer. It is very effective as the catalyst for the early hydration of the cement particles and improving the reaction between C3A and gypsum to produce C3A-hydration products which overall improves the early strength of cement.

SikaGrind® ES 2351 also performs as a cement grinding aid. These characteristics contribute to the following:

- Increased cement mill output at the same cement fineness between 6% and 15%.
- Reduced total cement production by reducing grinding costs per ton of cement and replacing clinker with other fillers.
- Increased early strength of cement between 15% and 30%.
- Improved cement dry flowability.

PRODUCT INFORMATION

Packaging	1,000 kg IBC or 24,000 kg Tanker
Shelf life	12 months in undamaged, unopened and sealed original containers
Storage conditions	Stored at temperatures between +5°C and +35°C. Protect from frost, direct sunlight, and contamination. Note: When delivered in bulk, the tanks and equipment used must be free from contaminants.
Appearance and colour	Dark Brown Liquid

Density	1.160 - 1.190 g/cm ³ (25 °C (77 °F))
Viscosity	< 20.0 mPa.s (25 °C (77 °F))
pH-Value	8.0 - 11.0 (25 °C (77 °F))
Recommended dosage	Typical dosage rates of SikaGrind® ES 2351 are between 0.3 – 0.6 kg per tonne of cement (0.03 – 0.06% of total weight = cement clinker + additions). The strength development of cement is influenced by the chemical and physical composition of the basic ingredients of the cement, grinding process parameters and clinker characteristics. Plant trial or laboratory scale ball mill test is recommended to determine the optimum dosage required to achieve specific requirements. Higher dosage might be needed for higher percentage of clinker replacement or less reactive cement. For consistent results, SikaGrind® ES 2351 must be accurately dispensed.
Dispensing	SikaGrind® ES 2351 shall be added onto the clinker feed shortly before the mill entrance or directly into the grinding mill. Suitable dosage pumps with adjustable flow rates shall be used for accurate dosing. Note: Periodically, the end of the additive tube/hose shall be checked to ensure that it is not blocked.
Compatibility	Cements treated with SikaGrind® ES 2351 are compatible in concretes produced with all commercial admixtures including air entrainers, water reducers, retarders, and superplasticizers. The performance of concrete admixtures is not adversely affected using SikaGrind® ES 2351.

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.

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.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

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.

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