

SILRES[®] BS 5137



Silicone Fluid Emulsions

SILRES[®] BS 5137 is a very efficient aqueous water-dilutable emulsion of a reactive polydimethylsiloxane. It is used to impart water repellency to glass wool (fiber glass) or stone wool bound with phenolic resin. It can also be used for expanded minerals such as perlite or vermiculite, or expanded clay aggregates.

Properties

SILRES[®] BS 5137 has an ideal viscosity for the feeding and dilution process during application. Once sprayed onto the substrate, in comparison to other emulsions of reactive polydimethylsiloxanes SILRES[®] BS 5137 shows an especially high thermal stability in the manufacturing process of the thermal insulating material.

Technical data

General Characteristics

Property	Condition	Value	Method
Active substance	-	50.0 wt. %	-
Appearance	-	white liquid	ASTM D 412
Density	20 °C	approx. 1 g/cm ³	-
Ignition temperature (liquids)	-	415 °C	DIN 51794
pH	-	4 - 6	-

These figures are only intended as a guide and should not be used in preparing specifications.

All the information provided is in accordance with the present state of our knowledge. Nonetheless, we disclaim any warranty or liability whatsoever and reserve the right, at any time, to effect technical alterations. The information provided, as well as the product's fitness for an intended application, should be checked by the buyer in preliminary trials. Contractual terms and conditions always take precedence. This disclaimer of warranty and liability also applies particularly in foreign countries with respect to third parties' rights.

Applications

- Insulation Materials

Application details

SILRES® BS 5137 is applied after compatibility test with the phenolic resin mixture by mixing and spraying or via an additional spraying equipment applied separately – at the same time or shortly before application of the binder. For this purpose it can be diluted with any quantity of water.

Based on the glass or stone fiber mass the addition ratio varies between 0,05 and 0,2 weight % for stone wool and 0,1 and 0,3 weight % (always based on the weight of the dried final product) for glass wool. The quantity of SILRES® BS 5137 to be applied also depends on the desired water repellency of the end product given. Individual tests must always be conducted in order to define the necessary quantities.

To impart water repellency to expanded perlite or similar porous materials, SILRES® BS 5137 is applied by spraying as well. 0,2 to 0,4 % by weight SILRES® BS 5137 are recommended as a dosage rate for perlite, 0,1 to 0,2 % for expanded clay aggregates. It can be sprayed onto the warm expanded material in order to avoid an additional drying process. Prolonged heating of the siliconized material must however be avoided.

Guide formulation for laboratory tests to make perlite water-repellent (no guarantee can be given due to substrate and process variations): Mix 0,80 g SILRES® BS 5137 with 400 g of deionized water. Thoroughly mix or spray 200 g of perlite with this impregnating solution in a mixer until the liquid has been completely absorbed. Fill the moist material into a large dish and dry in a drying oven at 50°C for seven days. Fill the impregnated perlite into fine-meshed nylon sacks and immerse in deionized water. The sacks must be covered by 5 cm of water. Weigh the samples after gentle centrifuging (to remove adherent water) at fixed intervals. The results show that the perlite absorbs about 5 % of its dry weight in water after one day. Untreated perlite absorbs far more than 100 % of its dry weight in water in the same period. The test for water repellency according to the standard ASTM 303-77 is recommended.

SILRES® BS 5137 has been developed and optimized to be compatible with phenolic resin binders and tolerates without surplus of ammonia varying processing and formulating conditions. It is compatible and can be mixed with most phenolic resins, no side reactions or precipitations are observed. Based on the large variety of phenolic resins used plus further specific additives, however, a specific compatibility test in each plant is necessary. As the shelf life of the various mixtures depends largely on the formulation e. g. on the dilution of the emulsion it is recommended to apply the binder mixture without delay.

Packaging and storage

Storage

The 'Best use before end' date of each batch is shown on the product label. Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

Safety notes

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available on request from WACKER subsidiaries or may be printed via WACKER web site <http://www.wacker.com>.

QR Code SILRES® BS 5137



For technical, quality or product safety questions, please contact:

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