

POWER-SPRAYS

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SPECIALIST MIXING, PUMPING & SPRAYING MACHINERY MANUFACTURERS FOR GRC

Rotors and Stators for the PS9000/PS9500/PS10000

**Please use the correct sand in your GRC mix to avoid excessive wear
and enjoy longevity of rotors and stators**

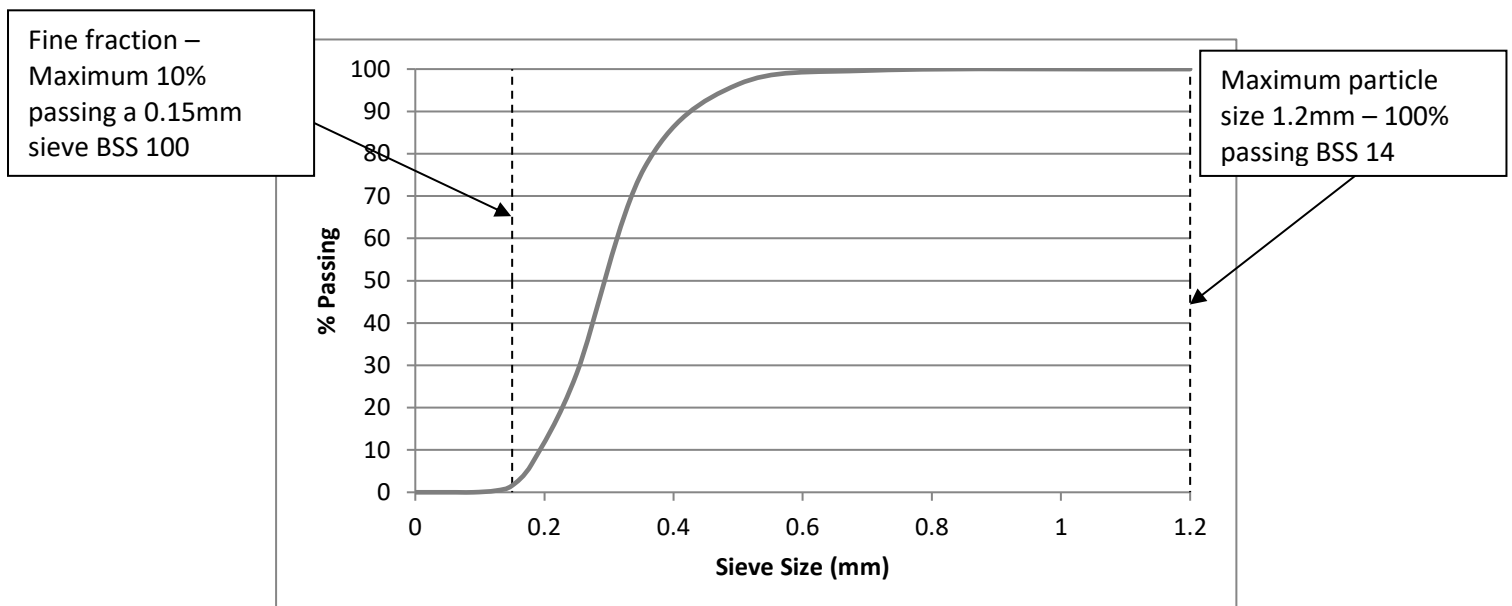
Background

Some sands are more abrasive than others and cause the rotors and stators to wear out too quickly. Unfortunately, abrasive wear is a complex subject and we are all limited to use the materials which are available. However, the lives of rotors and stators can be maximised by careful selection of the sand used.

The main considerations are:

Grading

The sand should have grading similar to the following graph:



Note that the shape of the grading is an 'S' curve. Ideally there should be a good distribution of particle sizes below the maximum size of 1.2mm but not more than 10% below fine sieve no. 100.

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Angularity of Particles

Ideally, the sand should be the result of an 'aeolian' deposit (i.e. originating from a desert). Aeolian means 'wind blown'. By virtue of the wind blowing the sand particles over and over each other, they become 'rounded' in shape.

Round shaped particles are relatively non-abrasive compared to 'angular' particles.

Sands with very angular particles should be avoided if possible. In particular, sands which are a result of crushing larger stones should not be used. These will not only contain very angular, sharp particles, they will also comprise the hardest minerals in the parent rock.

The table below shows pictures of different sands. While all could be used to produce GRC, only one has the recommended grading and shape characteristics. Each ruler segment shown is 1mm.



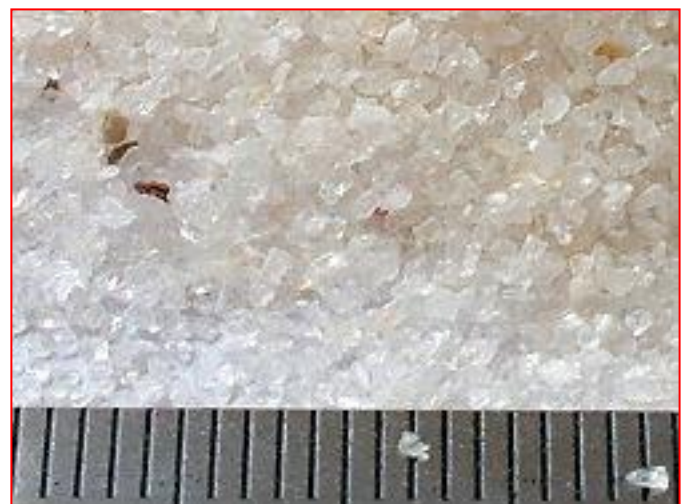
GOOD – Rounded particles, good distribution of sizes



BAD – Angular particles, larger than 1.2mm



BAD – Angular particles, poor distribution of sizes



BAD – Angular particles, poor distribution of sizes

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Other Considerations

The type of mineral within the sand will also influence the abrasiveness. Most aeolian deposits comprise silica. However, sands may contain a range of minerals. Minerals such as granite and basalt will be more abrasive than limestone, marble etc. Naturally, there will be a limited choice in many locations but generally sand comprising >90% silica will be available in most places.

New Rotors and Stators

Power-Sprays' rotors and stators are manufactured to high tolerances; as a result, when first assembling a rotor/stator, it may have a very tight fit. If this is the case, it is recommended you use a silicone spray lubricant (or soap and water) to assist assembly. DO NOT use mineral grease or other oil-based lubricants as these will infiltrate the rubber of the stator and cause it to wear rapidly.

Power-Sprays offers this information as advisory only. Given the range of sands, cements, mix designs etc used by GRC manufacturers internationally, Power-Sprays cannot offer any guarantee with regards to the life expectancy of rotors and stators and other 'consumable' parts which are used in the machinery. However, it is hoped that if manufacturers take note of the foregoing they will be able to optimise the lives of these components by carefully selecting appropriate materials.