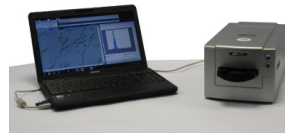


## PowderShape

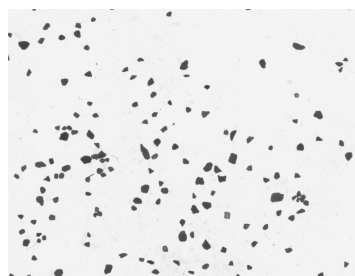
### Size and Shape Measurement of Various Constituents in Cement and Concrete Products<sup>1</sup>

PowderShape is a quality control and characterization system for powders, granules, grains and various other particles with a grain size of 20 µm to 3 cm. It is unique in its set of features, simple user interface, and rapid characterization process. The interactive reporting system has many reporting capabilities and allows to customize the histograms and measurement reports.

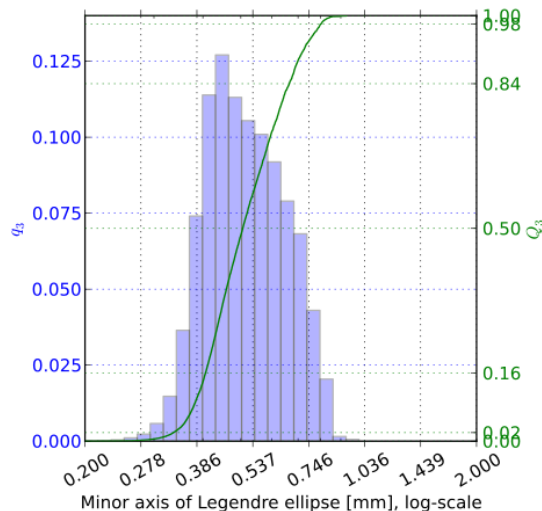


One of our strength is that our analysis is based on the ISO norms and uses for example shape descriptors according to ISO 9276. A further advantage is the correct characterization of elongated particles (high aspect ratio particles) due to the use of static image analysis. The analysis of fibers is possible with the add-on FibreShape. To get to know more details please contact us.

#### Shape measurement of aggregates for cement with PowderShape Standard



Aggregates for cement



The histogram shows the width distribution (minor axis of Legendre ellipse) of the particles weighted by volume.

$q_3(x)$  = distribution density by volume and  $Q_3(x)$  = cumulative distribution by volume.

Statistics:

	Median	Span <sup>1</sup>
Minor axis of Legendre ellipse:	0.44 mm	0.25 mm
Solidity:	0.9166 mm	0.0440 mm
Circularity c:	0.8836 mm	0.0740 mm
Aspect ratio:	0.7391 mm	0.2614 mm

<sup>1</sup> Span =  $X_{90,r} - X_{10,r}$

## Specifications:

Measurable size range:	PowderShape Standard: 30 µm to 3 cm in grain size (1600 dpi real optical resolution) PowderShape MF: 20 µm to 5 mm in grain size (3200 dpi optical resolution)
Characterization parameters:	<ul style="list-style-type: none"> <li>• particle size (grain/grit size, max size, min size)</li> <li>• shape descriptors according to ISO 9276 such as aspect ratio, ellipse ratio, elongation, circularity, convexity</li> <li>• optical properties: color and transparency</li> </ul>
Typical application:	Granules, metal powders, pharmaceutical powders, sand, aggregates, food grains, abrasive grits, seeds, pollen, etc.
Report features:	<ul style="list-style-type: none"> <li>• size or shape parameters weighted by length, area or volume</li> <li>• diagrams: histogram and/or cumulative distribution logarithmic and linear scale</li> <li>• statistical quantities: mean, median, standard deviation, span</li> </ul>
ISO Compliance:	ISO 9276
Voltage:	220/110 V 50/60 Hz;
Software:	<ul style="list-style-type: none"> <li>• freely adjustable size ranges, shape and color filters</li> <li>• allocation of each recognized particle to the parameter values</li> <li>• calibration of the scanner</li> <li>• creation of individual user profiles</li> <li>• creation of individual measure masks</li> <li>• interactive reporting system available in English and German</li> </ul>