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Technical Rule – Standard

DVGW W 113 March 2001

**Determination of gravel-pack diameter and hydrogeological analysis
of grain size distribution for purposes of well construction**

WATER

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Author details

Members of the technical body responsible for the preparation:

Christian Etschel, Hof; Dr.-Ing. Attila Gàl, Haltern; Uwe Hansen, Neetze; Berthold Niehues, Bonn; Kerry F. Paul, Berlin; Lothar Schoka, Rostrup; Michael Tholen, Oldenburg

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DVGW German Technical and Scientific Association for Gas and Water

Josef-Wirmer-Straße 1–3

D-53123 Bonn

Phone: +49 228 9188-5

Fax: +49 228 9188-990

Email: info@dvwg.de

Internet: www.dvgw.de

Reprinting and photomechanical reproduction, also of excerpts, is only permitted with the approval of the DVGW e. V., Bonn.

Distribution: Wirtschafts- und Verlagsgesellschaft Gas und Wasser mbH, Josef-Wirmer-Str. 3, D-53123 Bonn

Phone: +49 228 9191-40 · Fax: +49 228 9191-499

Email: info@wvgw.de · Internet: www.wvgw.de

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Preamble

Knowledge of the grain size distribution of water-conducting granular soil is of great importance for the construction of wells and for the description of the hydrogeological conditions. It is in particular possible to determine the required gravel-pack diameter in a well's filter section on the basis of the cumulative grain size curve and the grain size distribution curve. In addition, it is possible to derive estimated data for the coefficient of hydraulic conductivity and the porosity of the examined soil sample.

Results of the DVGW research project "Examinations on the stability and clogging of sand and gravel filters during drilling" (DVGW 1982) have been included in the here described procedure to determine the required gravel-pack diameter.

Compared to the Technical Standard W 113 "Determination, representation and evaluation of the grain size distribution of water-conducting granular soils for geohydrological examinations and for the construction of wells" from the year 1983, different practical possibilities for determining the required gravel-pack diameter and the hydrogeological parameters coefficient of hydraulic conductivity and porosity are demonstrated.

Apart from determining the grain size distribution, details on its representation and especially on its evaluation have been provided.

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