

Publication

An investigation of grinding hardness of some ornamental stones

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)**ID** 4627225**Author(s)** Hänni, Henry; Brunk, Richard; Franz, Leander**Author(s) at UniBasel** [Franz, Leander](#) ;**Year** 2021**Title** An investigation of grinding hardness of some ornamental stones**Journal** The Journal of Gemmology**Volume** 37**Number** 6**Pages / Article-Number** 632-643**Keywords** grinding hardness, ornamental stones, dependence from the rock texture and the Mohs hardness

As an extension to the typical 'scratch hardness' (e.g. Mohs scale) of minerals, at the end of the 19th century Austrian mineralogist August Rosiwal postulated a 'grinding hardness' scale. He published values expressing different amounts of resistance to abrasion of ornamental and building stones in comparison to quartz. For the present paper, 25 different ornamental stone materials were ground under normalised conditions to measure their grinding hardness (GH) relative to single-crystal quartz (GH 100). Not surprisingly, the values varied greatly, from GH 174 for fibrous chalcedony to GH 11 for rhodochrosite. A remarkable result was the GH 103 value obtained for nephrite, which consists of monomineralic aggregates of clinoamphibole with a distinctly lower Mohs hardness than quartz. These investigations show that a fibrous, intensely interlocked texture provides increased resistance against grinding, which is consistent with previous investigations.

edoc-URL <https://edoc.unibas.ch/84880/>**Full Text on edoc** No;**Digital Object Identifier DOI** 10.15506/JoG.2021.37.6.632**ISI-Number** 000681491800018**Document type (ISI)** Article