

ガラス質結晶凝灰岩の「打ち水効果」の検証
～地元幅広く分布する凝灰岩「竜山石」の都市開発利用に向けて～
The Usefulness of Utilizing the Tuff for City Development

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The glassy crystal tuff “Tatsuyama-ishi” has been distributed over a wide range of Kakogawa city – Takasago city. A rhyolite was erupted underwater and became a hyaroclastite, and the Tatsuyama-ishi was formed. In this process, the constitution particles were cementated and devitrified. This organization appears to have the “uchi-mizu” effect. The steam takes away the heat from the alley as evaporation heat when the alley is sprayed down with water in summer evening.

In this experiment, Tatsuyama-ishi and granite that is used generally as the stone paving were soaked with water, and the temperature, humidity, amount of vapor, and the change of the weight of the over time were measured in a closed room for several days. The results were as follows: (1) Tatsuyama-ishi absorbs water much better than granite, and evaporates it in a long time. (2) The amount of vaporization of Tatsuyama-ishi for each time increment was influenced strongly by temperature. (3) The specific heat of Tatsuyama-ishi is between 0.87J/g°C and 0.99J/g°C, higher than that of granite (0.80J/g°C). Therefore, replacing granite paving with Tatsuyama-ishi material would result in a decrease in temperature. From here, the next step is to investigate joint development with a local stone trader for use in the city.