

Flow Zone Indicator = FZI

One of the measures of rock quality in terms of availability for flow:

$$FZI = \frac{RQI}{\phi_z}$$

where

RQI	Rock Quality Index
ϕ_z	normalised porosity

Unit = m

It has much weaker dependence on [effective porosity](#) and [shaliness](#) and can be often considered constant within a given [lithofacies](#) which makes it a very efficient tool for [lithofacies analysis](#)

The constant [FZI](#) means that [permeability](#) strictly follows [Cozeny-Karman permeability @model](#), although it's rarely met in practise.

The [FZI](#) depends on grains size distribution, shape and packing and can be modelled as follows:

$$(1) \quad FZI = \frac{1}{\sqrt{F_S} S_{gV} \tau}$$

where

$S_{gV} = \Sigma_e / V_\phi$	surface pore area per unit pore volume	Σ_e	pore surface area
F_S	pore shape factor	V_ϕ	pore volume
τ	pore channel tortuosity		

In some practical cases this can be further simplified to:

$$(2) \quad FZI \approx 0.0037 \cdot \frac{d}{\tau}$$

where

d	average grain size
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One of the proposed qualification of reservoir quality based on [FZI](#) is given by the **Table 1**.

Table1. One of the grade systems on reservoir quality based on [FZI](#).

FZI Value	Reservoir Quality
FZI > 8.0	Very Good

3.5 < FZI 8.0	Good
1.0 < FZI 3.5	Medium
0.45 < FZI 1.0	Poor
FZI 0.45	Very Poor

See also

[Petroleum Industry / Upstream / Subsurface E&P Disciplines / Petrophysics](#)

[[Rock Quality Index \(RQI\)](#)] [[Absolute permeability @model](#)]