

Sonic Logging

The key measurement is the **p-wave** velocity V_p and **s-wave** velocity V_s .

The equivalent measurement is **travel time**: $\tau_p = 1/V_p$ and $\tau_s = 1/V_s$.

Table 1. Typical values of wave velocities.

Media	P-wave velocity	S-wave velocity
	V_p , m/s	V_s , m/s
Rocks	4,500	2,300
Casing	5,850	7,800
Weight cement	4,000	2,400
Conventional cement	2,800	1,900
Low-density cement	1,950	1,200
Ultra-low-density cement	1,600	1,100
Water	1,500	1,000

References
