

Part 1

A. Pole Loading Test for Post

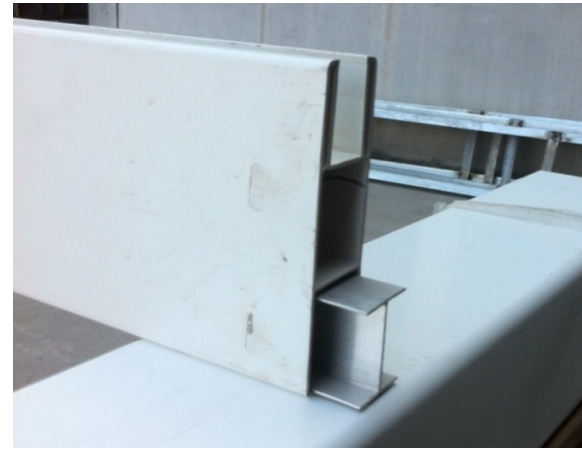


Test Condition: distance=2.6m, loading weight=50kgs, loading time=5min

B. Pole Loading Test for Top/Bottom Rail



Test Condition: distance=2.6m, loading weight=50kgs, loading time=5min



Part 2

A. In-fill Load



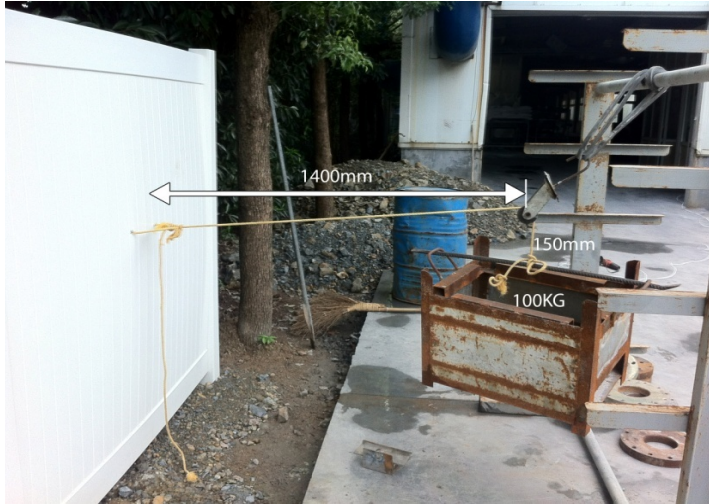
Test Condition: distance=1.4m, loading weight=70kgs, loading time=10min

B. Uniform Load Vertically



Test Condition: loading weight=160kgs, loading time=10min

C. Wind Resistance



Test Condition: distance=1.4m, loading weight=100kgs, loading time=10min

八級風壓力： $W = 0.5 * \rho * v^2 = 0.5 * 1.29 * 20.7^2 = 276\text{Pa}$

九級風壓力： $W = 0.5 * \rho * v^2 = 0.5 * 1.29 * 24.4^2 = 384\text{Pa}$

W為風壓，單位Pa； ρ 為0°C標準大氣壓下的空氣密度， 1.29kg/m^3 ；v取八級風速上限值20.7m/s，九級風速上限值24.4m/s。

根據物理公式，得出F壓力=G重物重力，施加在Fence上的壓強 $P = F\text{壓力}/S\text{受力面積}$

$$F = mg = 100 \times 9.8 = 980\text{N}$$

$$S = 1.6\text{m} \times 0.089\text{m} = 0.142\text{m}^2$$

$$P = 980 / 0.142 = 6889\text{Pa}$$