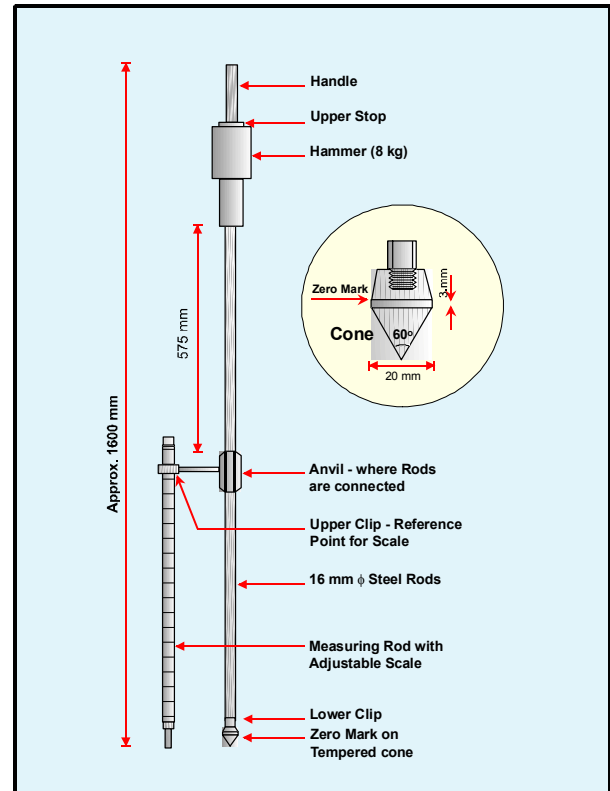


DYNAMIC CONE PENETRATION (DCP)



SPECIFICATIONS

- Made from Steel
- Consists of:
 - 16 mm dia. and 1 m length steel rods
 - 20 mm dia. and 60° steel cone
 - 8 kg hammer with falling height of 575 mm



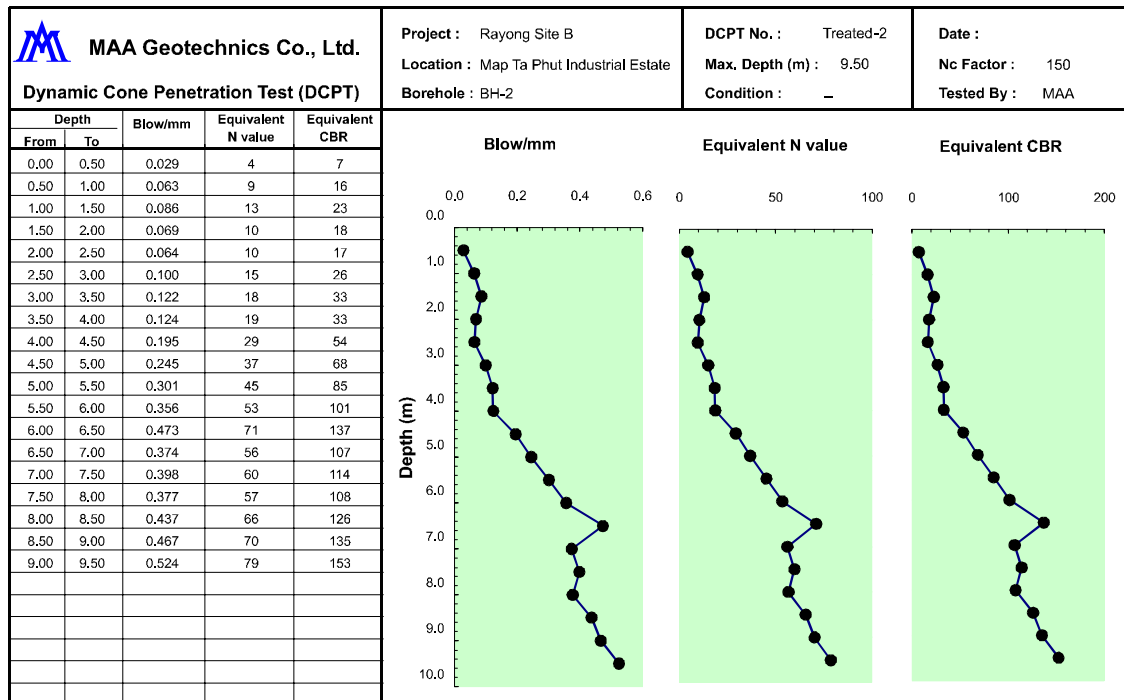
POCEDURE

- Assemble the DCPT as shown in above figure ensuring that the parts of fitting properly and the hammer can slide freely.
- Place the tip of the cone on the surface to be tested.
- Hold the DCPT vertically and knock the cone by means of the hammer into the surface up to the zero mark.
- Attach the measuring rod to the DCPT and zero the sliding scale.
- While holding the DCPT vertically, lift the hammer to the upper end and allow it to fall freely and strike the anvil, driving the cone into the ground surface.
- Read the penetration for each blow or every few blows of the driving.
- Record the penetration (to the nearest 1 mm) and the number of blows.





TEST RESULTS



CORRELATION

Comparison between DCP and SPT Equipment

| Type | Weight of Hammer (kg) | Drop Height (cm) | Efficiency | Cone Diameter (mm) | Test Length (mm) | Cone Factor (Cf) |
|------|-----------------------|------------------|------------|--------------------|------------------|------------------|
| SPT | 63.5 | 76 | 0.77 | 50 | 300 | 1.25 |
| DCP | 8.0 | 57 | 1 | 22 | 1 | 1 |

$$Q_u = \frac{(0.77) \times W_1 \times H_1 \times N_{SPT} \times C_{f1}}{V_1} = \frac{W_2 \times H_2 \times n_{DCP} \times C_{f2}}{V_1}$$

$$\text{given } N_{SPT} = 150n_{DCP}$$

