

### **10.7.3.11 GROUP LATERAL LOAD RESISTANCE**

Pile group factored resistance for lateral loads shall be taken as:

$$Q_R = \eta \phi_L \Sigma Q_L$$

Where:

$Q_L$  = nominal lateral resistance

For seat type abutments service limit state shall be limited to ¼ inch, and for Strength and Extreme Event Limit States shall be limited to 2”

$\phi_L$  = resistance factor<sup>1</sup>

For Service Limit State  $\phi_L = 1.0$

For Strength Limit State  $\phi_L = 0.9$

For Extreme Event Limit State  $\phi_L = 1.0$

$\eta$  = Group Efficiency Factor

$\eta = 0.75$  cohesionless soil

$\eta = 0.85$  cohesive soil

Note: for integral abutments see [..\11 Abutments Piers and Walls\11.6.1.2 Integral Abutments.doc](#)

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<sup>1</sup> These resistance factors have been approved by the Geotechnical Engineer