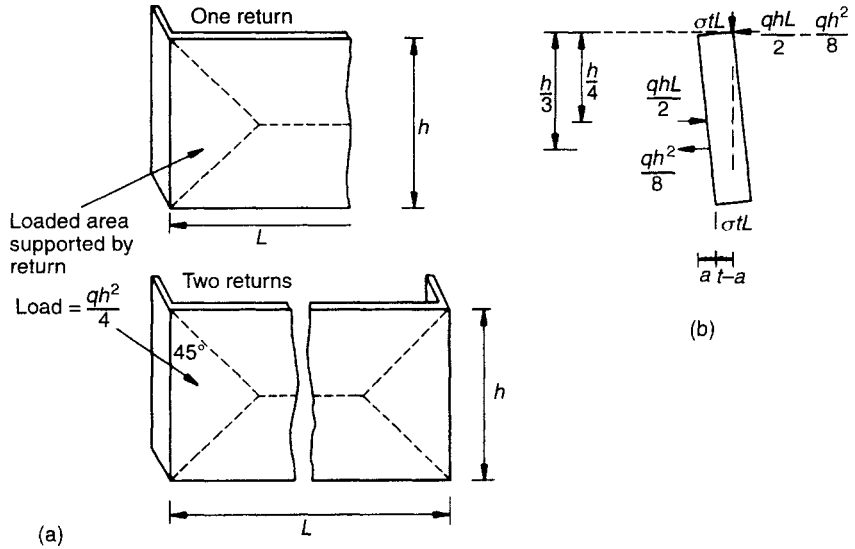

Fig. 7.5 Simplified failure mechanism for walls with returns.

Now substituting the value of q_0 (wall with no return) from equation (7.3) into equation (7.5)

$$q_1 = q_0 \frac{1}{1 - 1/(3\alpha)} \tag{7.6}$$

Similarly, for a wall with two returns (Fig. 7.5 (a)):

$$\sigma t^2 L = q_2 \frac{hL}{2} \frac{h}{4} - q_2 \frac{h^2}{8} \frac{2h}{3} \tag{7.7}$$

$$q_2 = \frac{8\sigma t^2}{h^2} \frac{1}{1 - 2/(3\alpha)} \qquad \text{where} \quad \alpha = L/h \geqslant 1.0 \tag{7.8}$$

From equation (7.3)

$$q_2 = q_0 \frac{1}{1 - 2/(3\alpha)} \tag{7.9}$$

For various values of α, the q_1/q_0 and q_2/q_0 plots have been shown in Fig. 7.6 together with the experimental results.

In the British Code of Practice BS 5628 the factors $1/[1\text{-}1/(3\alpha)]$ and $1/[1\text{-}2/(3\alpha)]$ are replaced by a single factor k. Table 7.1 shows the comparison between factor k obtained from the theory and from the code. From Table 7.1 it can be seen that the British code values are in good agreement with the theoretical results. The theoretical values in

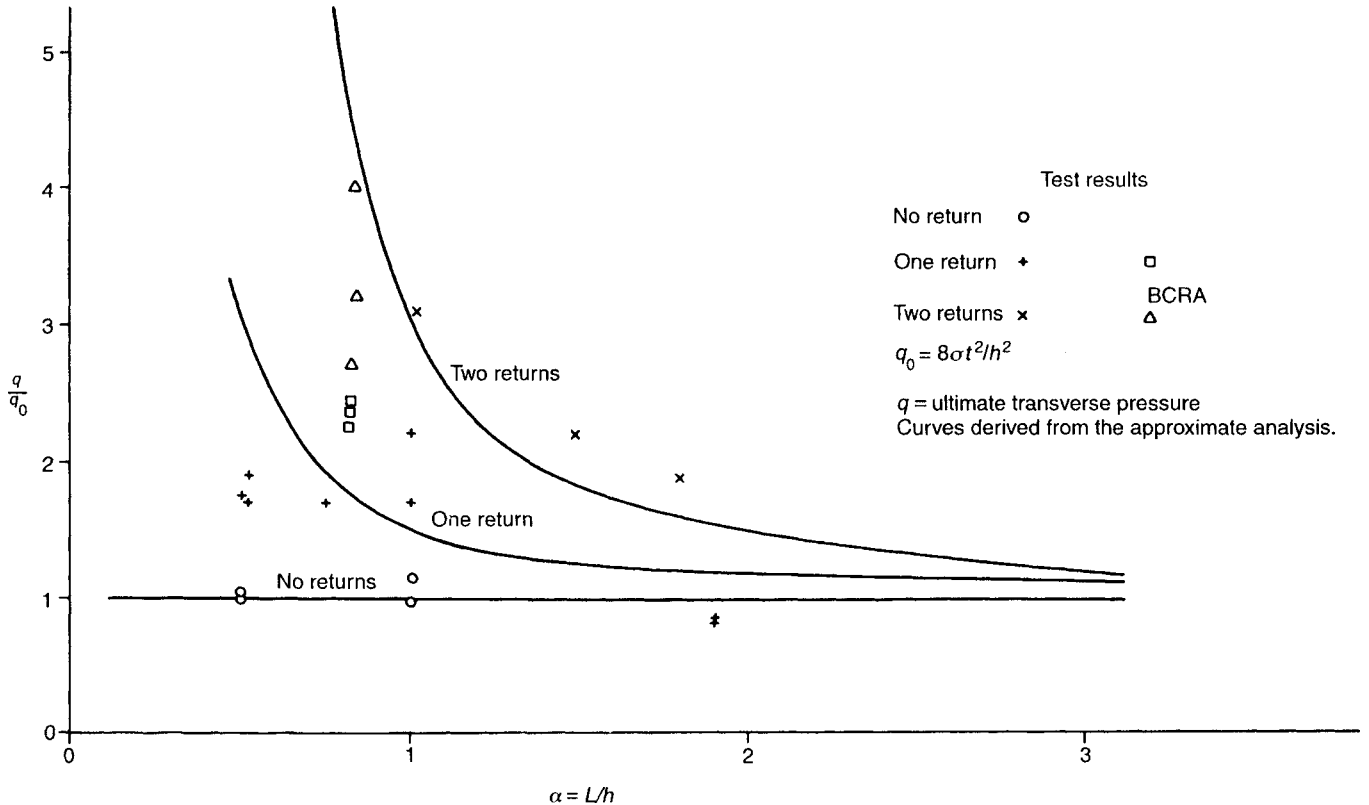

Fig. 7.6 Effect of returns on the lateral strength of walls with varying *L/h* ratios.