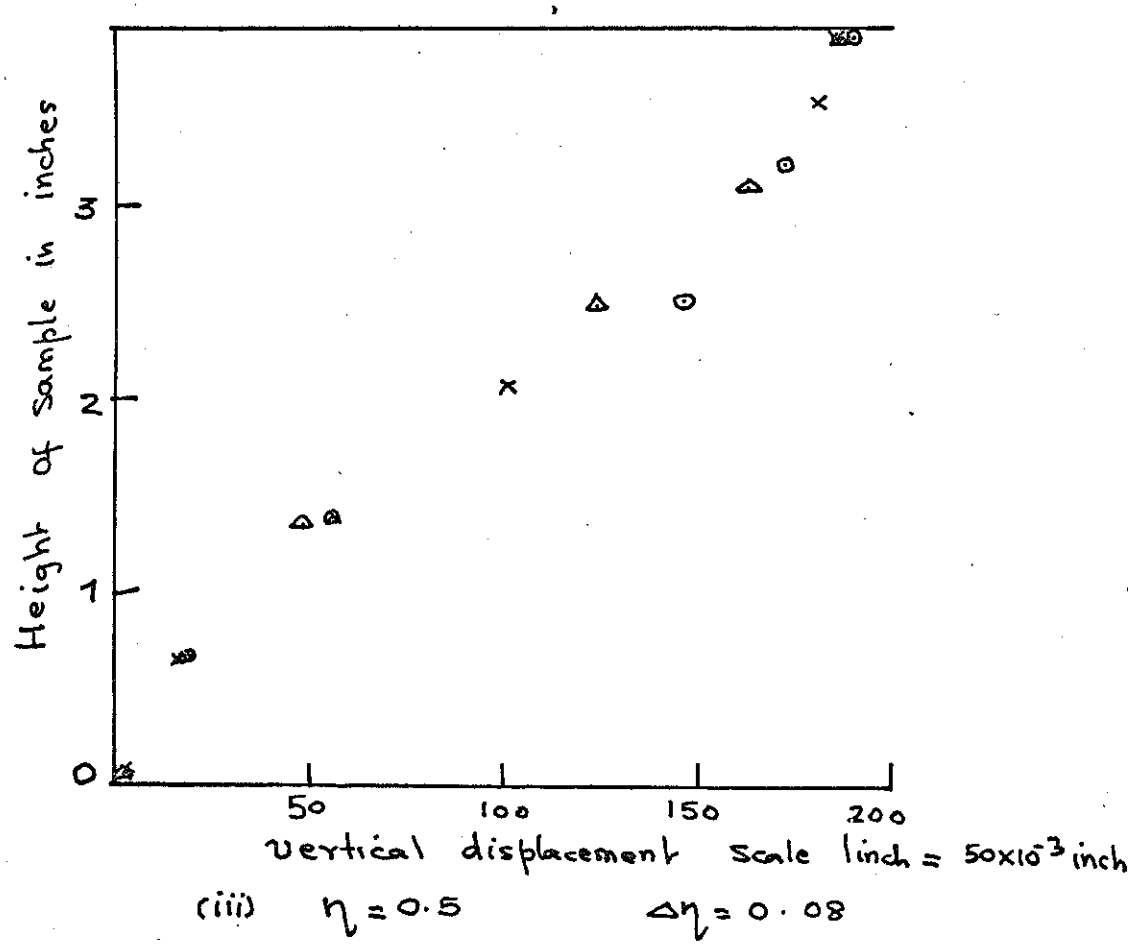


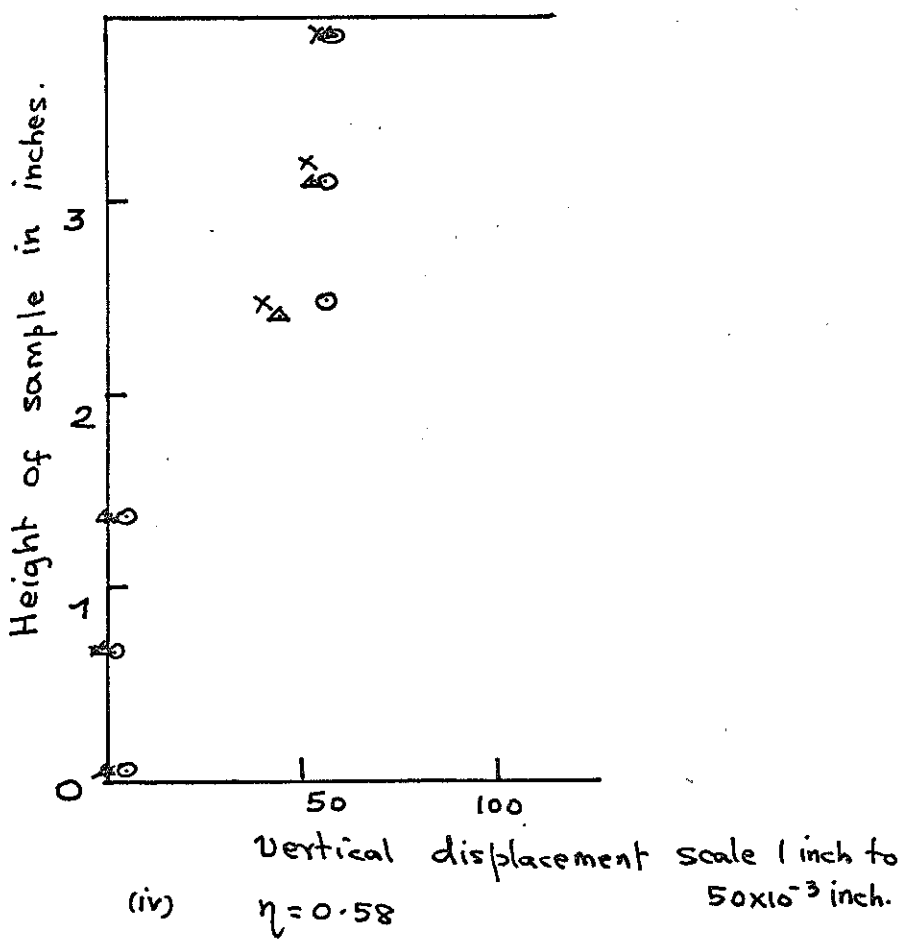


Fig. 3.57 (i-iv). Incremental vertical displacement patterns in the normally consolidated sample BE during a constant p extension test.

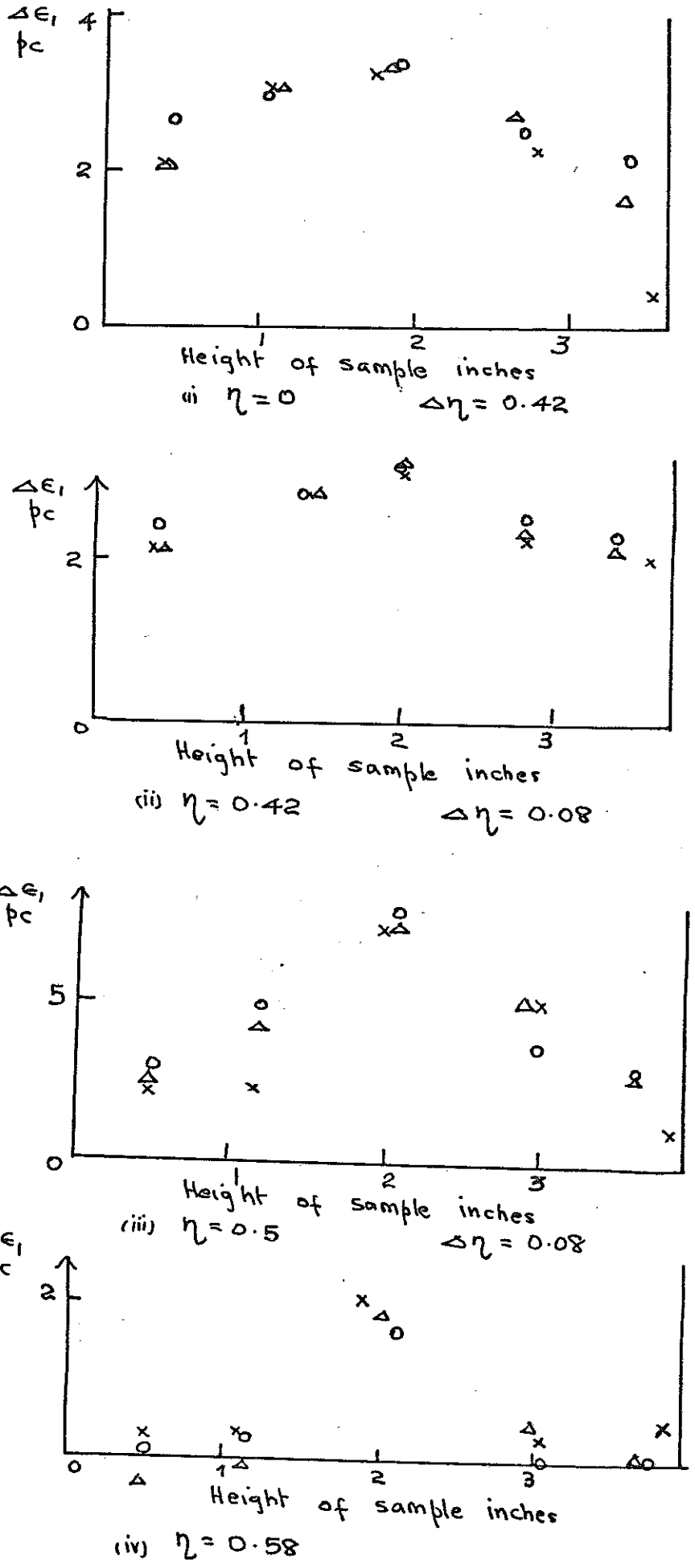


Fig. 3.58 (i-iv). Incremental axial strain distributions in the normally consolidated sample BE for four increments of stresses during a constant p test.

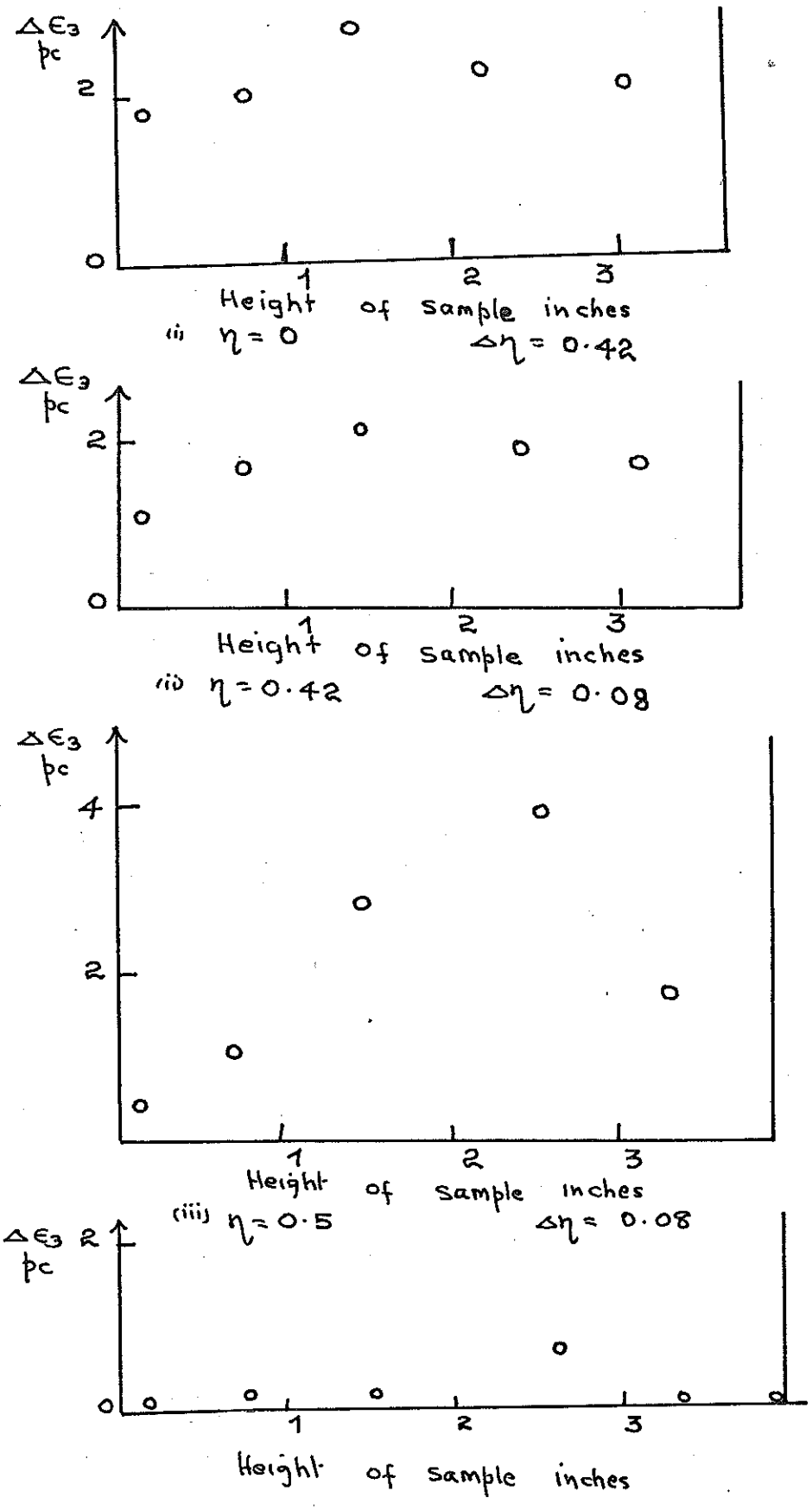


Fig. 3.59 (i-iv). Incremental radial strain distributions in the normally consolidated sample BE for four increments of stresses during a constant p test.

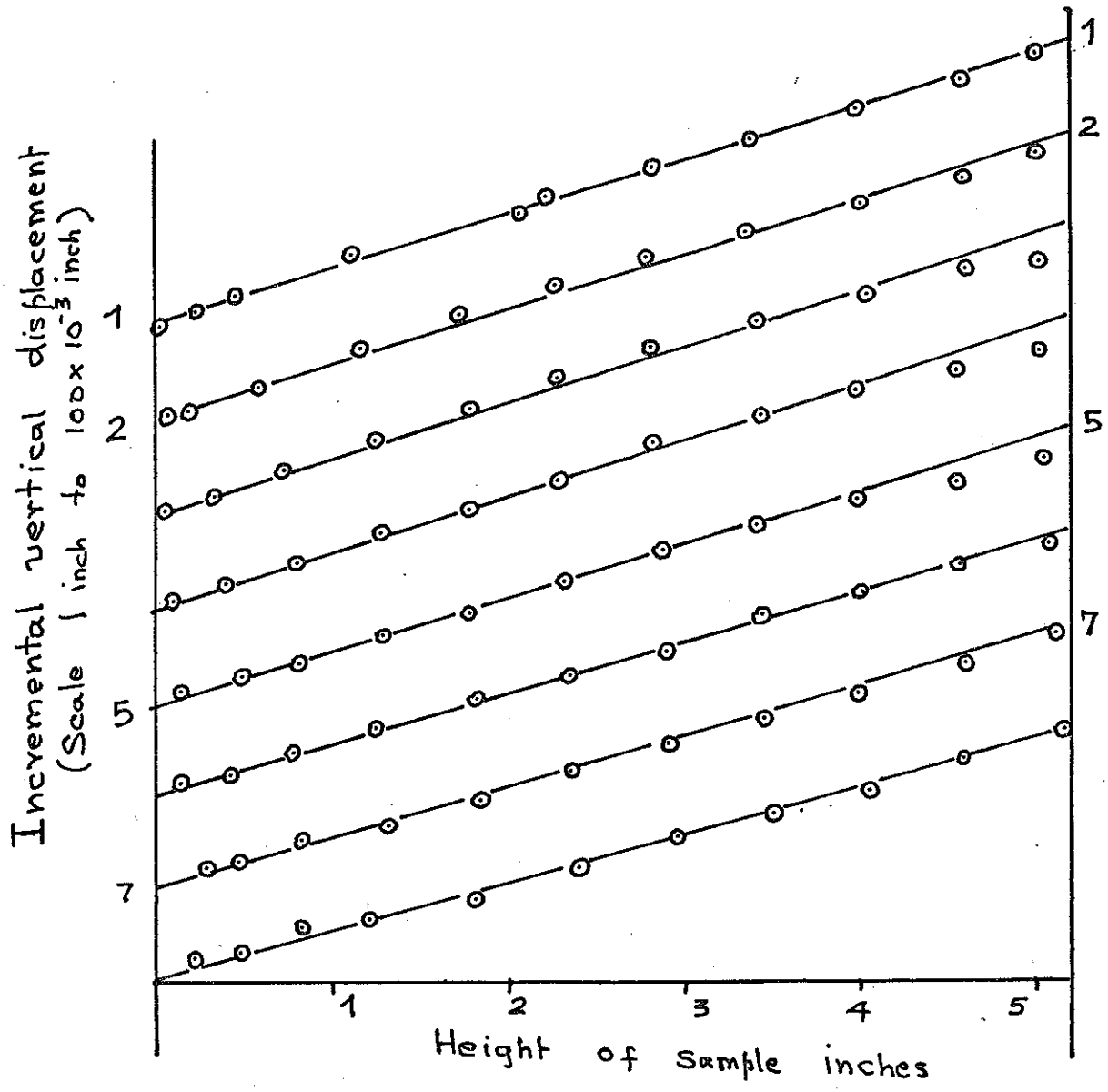


Fig. 3.62 (a). Incremental vertical displacement of markers plotted against their heights above base for eight vertical columns in plane I of sample OE during a constant p extension test.

$\eta = 0.3$ $\Delta\eta = 0.15$

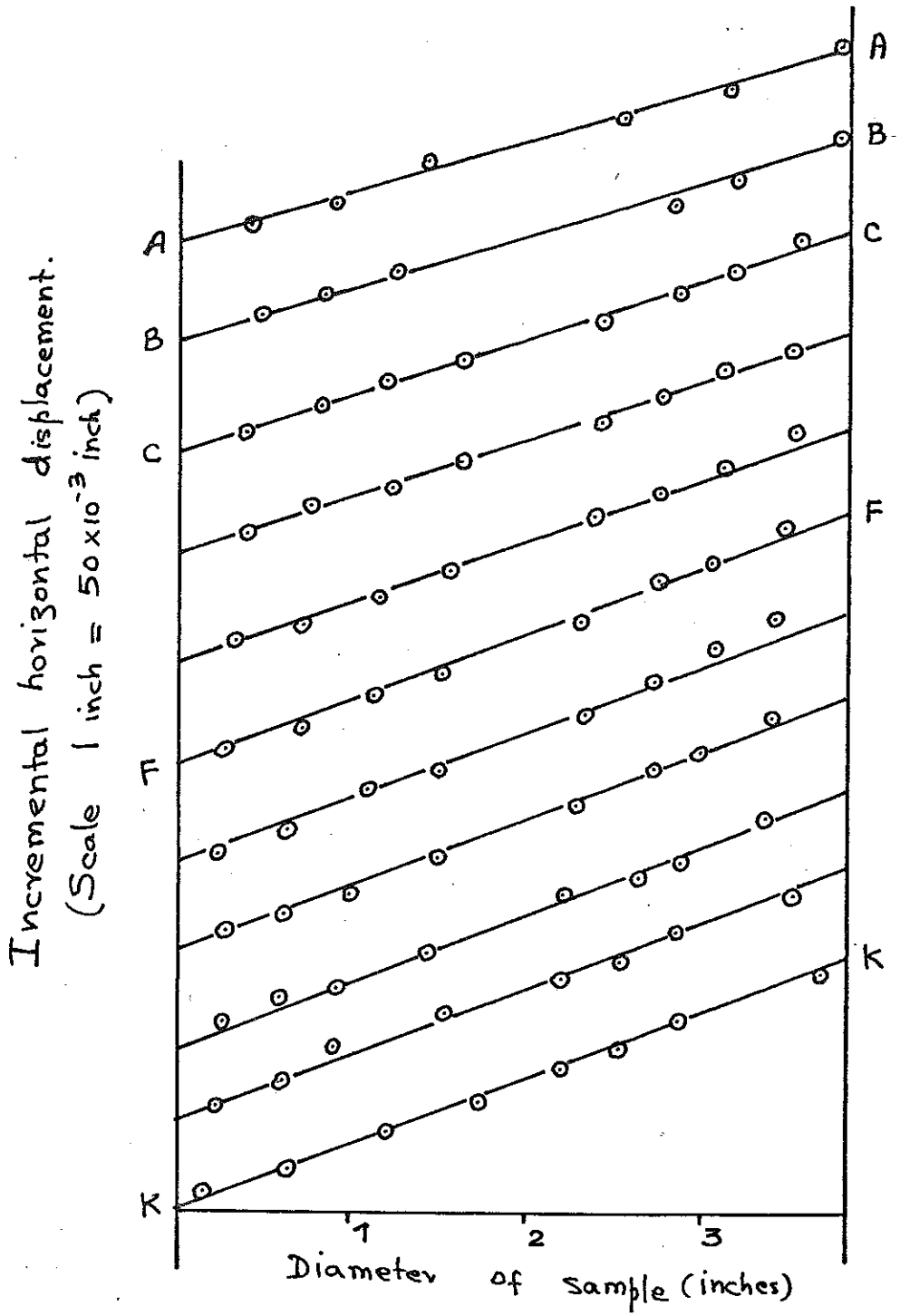
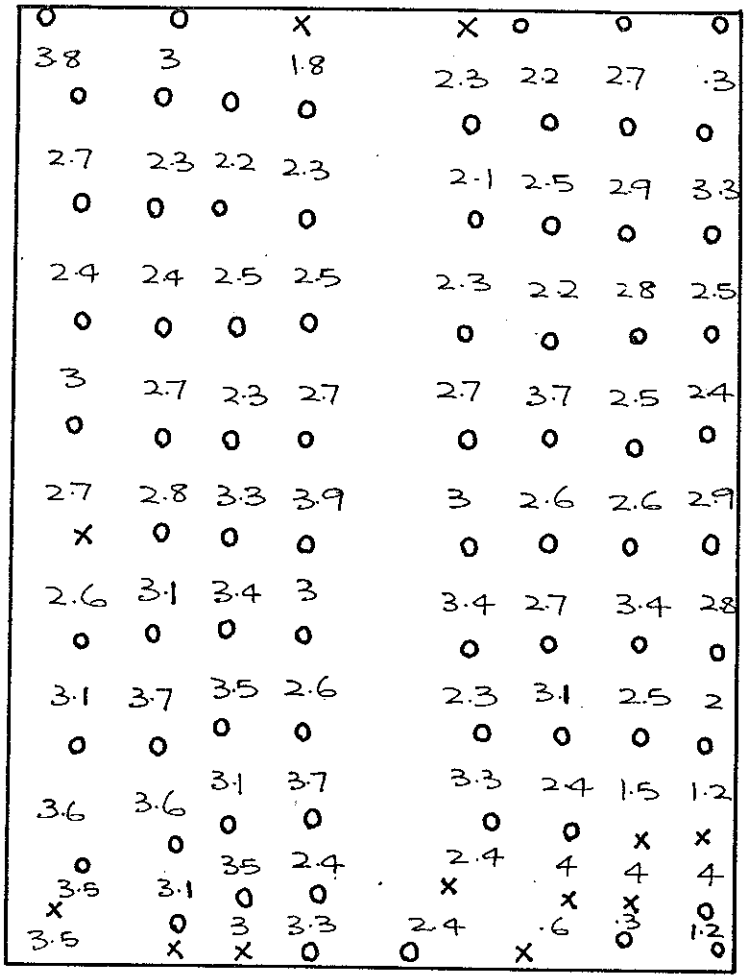


Fig. 3.62 (b). Incremental horizontal displacement of markers plotted against their distances along the diameter for eleven horizontal rows in plane I of sample OE during a constant p extension test.

$\eta = 0.3$ $\Delta\eta = 0.15$

Top end



Bottom end

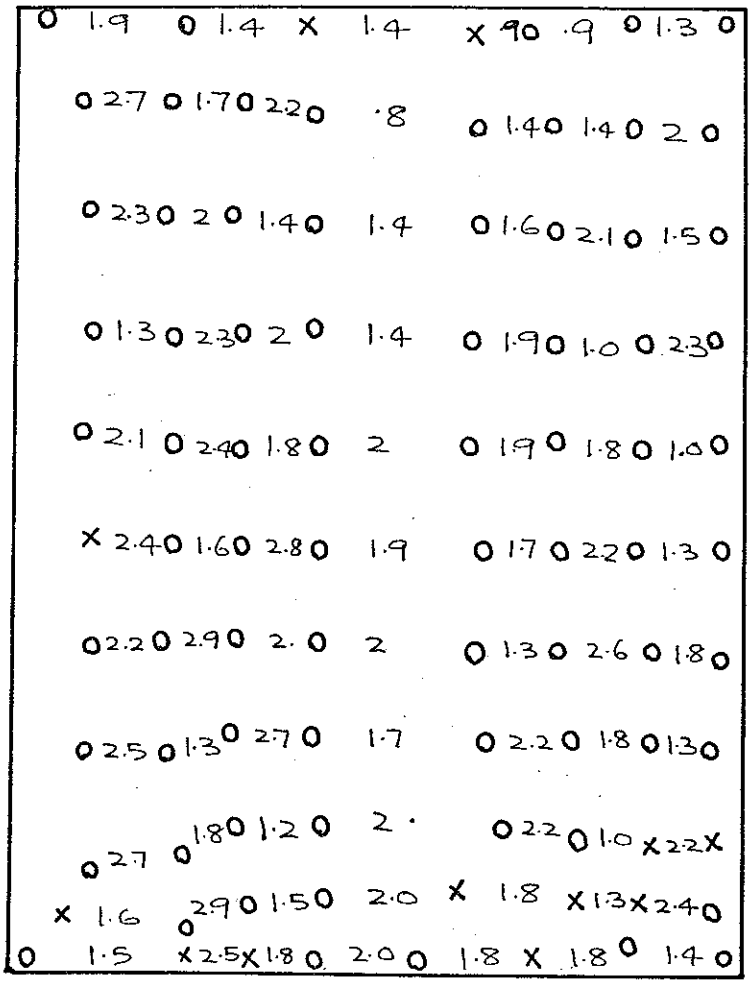
Fig.3.63 (a). Incremental axial strain distribution in plane I of the normally consolidated sample OE during a constant p extension test.

$\eta = 0.30$ $\Delta\eta = 0.15$

O Position of markers

x Markers missed during arrangement.

Top end.



Bottom end

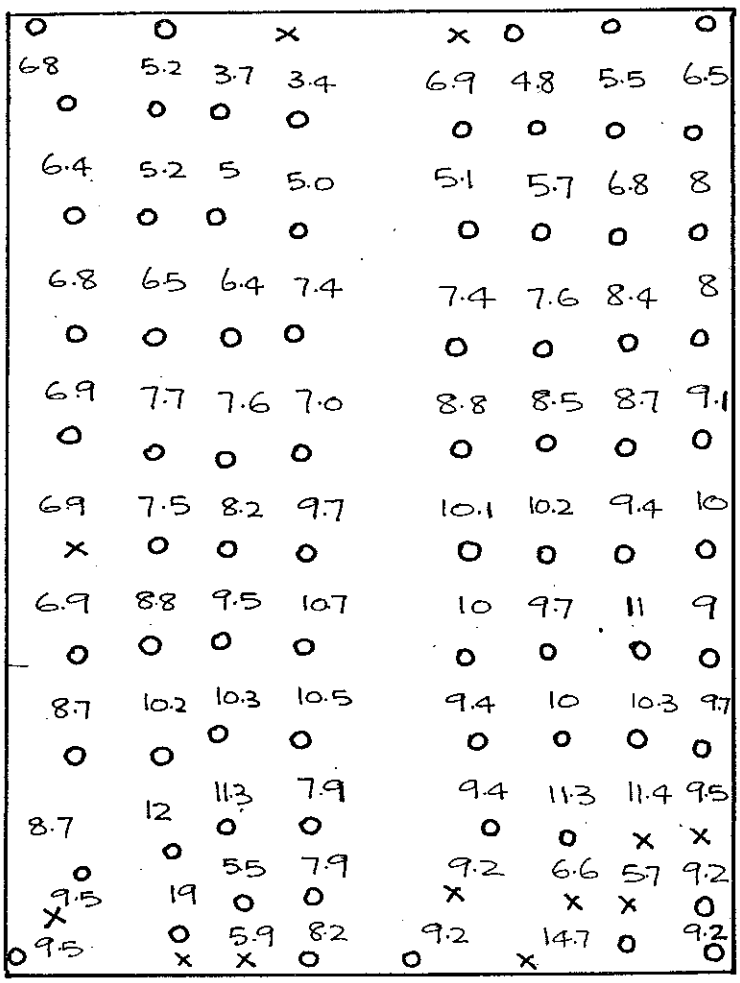
Fig. 3.63 (b). Incremental radial strain distribution in plane I of the normally consolidated sample OE during a constant p extension test.

$\eta = 0.31$ $\Delta\eta = 0.15$

O Position of markers.

X Markers missed during arrangement.

Top end



Bottom end

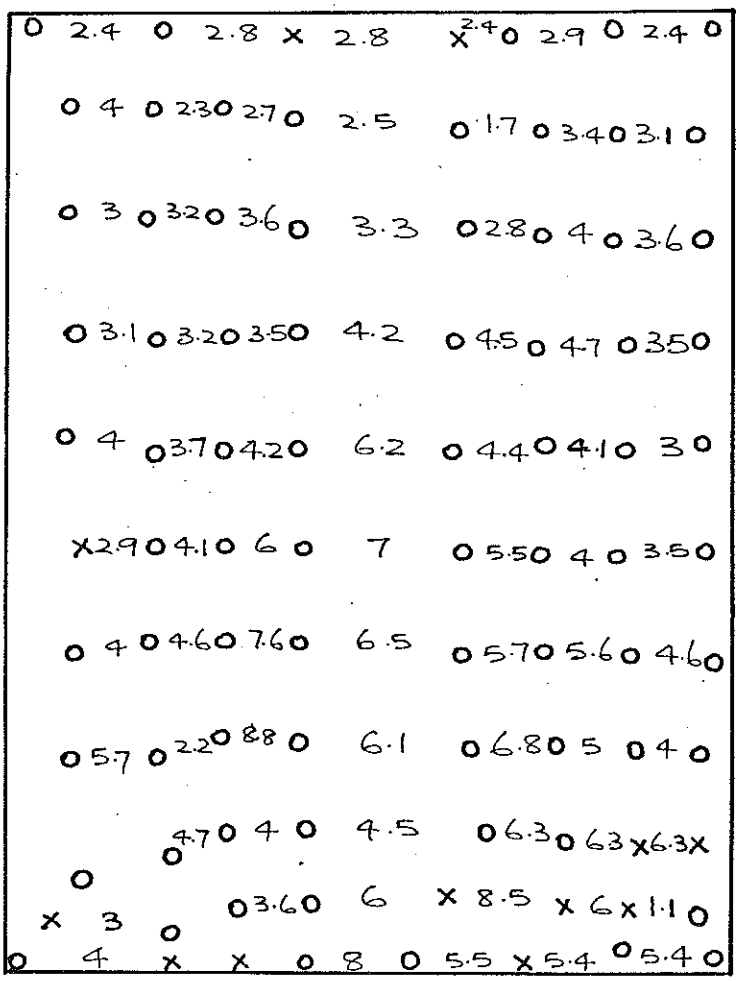
Fig. 3.64 (a). Incremental axial strain distribution in plane I of the normally consolidated sample OE during a constant p extension test.

η = 0.45 $\Delta\eta$ = 0.20

O Position of markers

× Markers missed during arrangement.

Top end



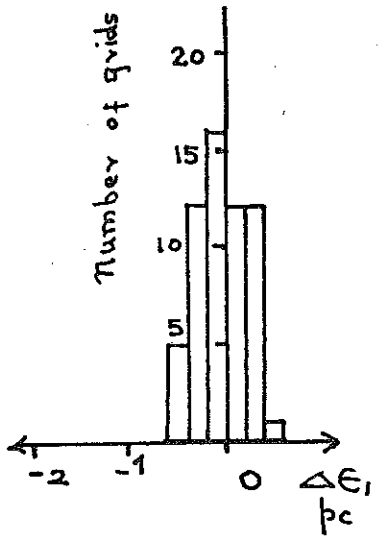
Bottom end

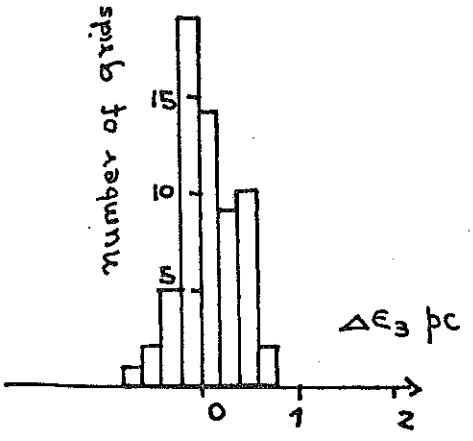
Fig. 3.64 (b). Incremental radial strain distribution in plane I of the normally cosolidated sample OE during a constant p extension test.

$\eta = 0.45$ $\Delta\eta = 0.20$

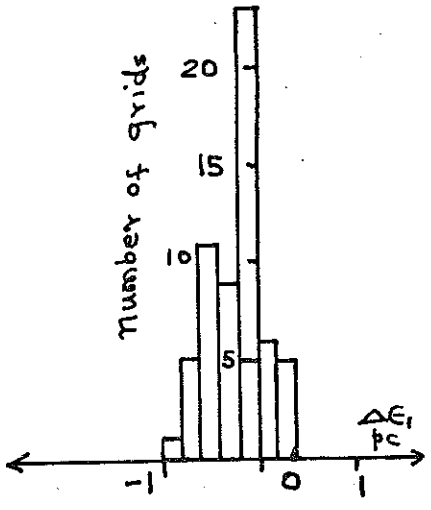
O Position of Markers.

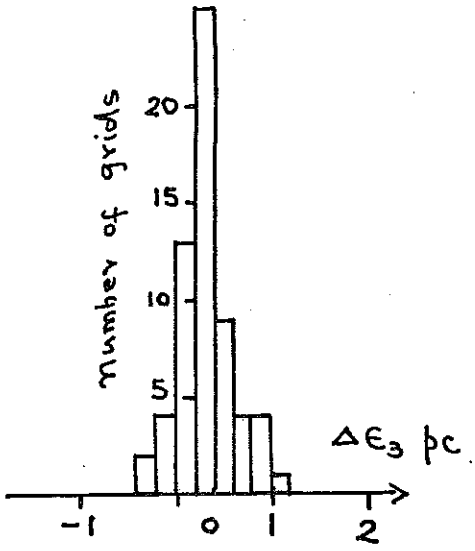
x Markers missed during arrangement.



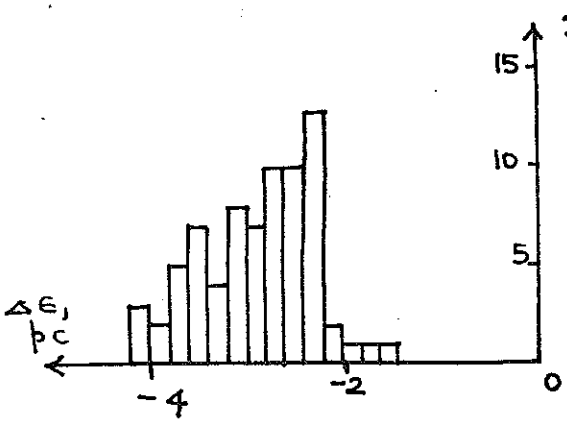


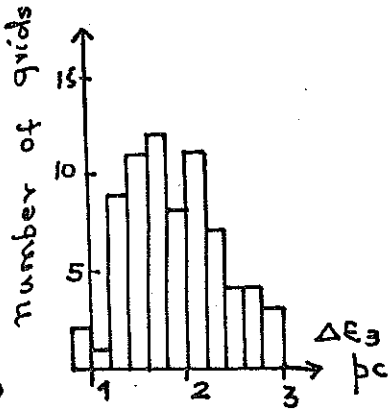
(i) $\eta = 0$ $\Delta\eta = .16$





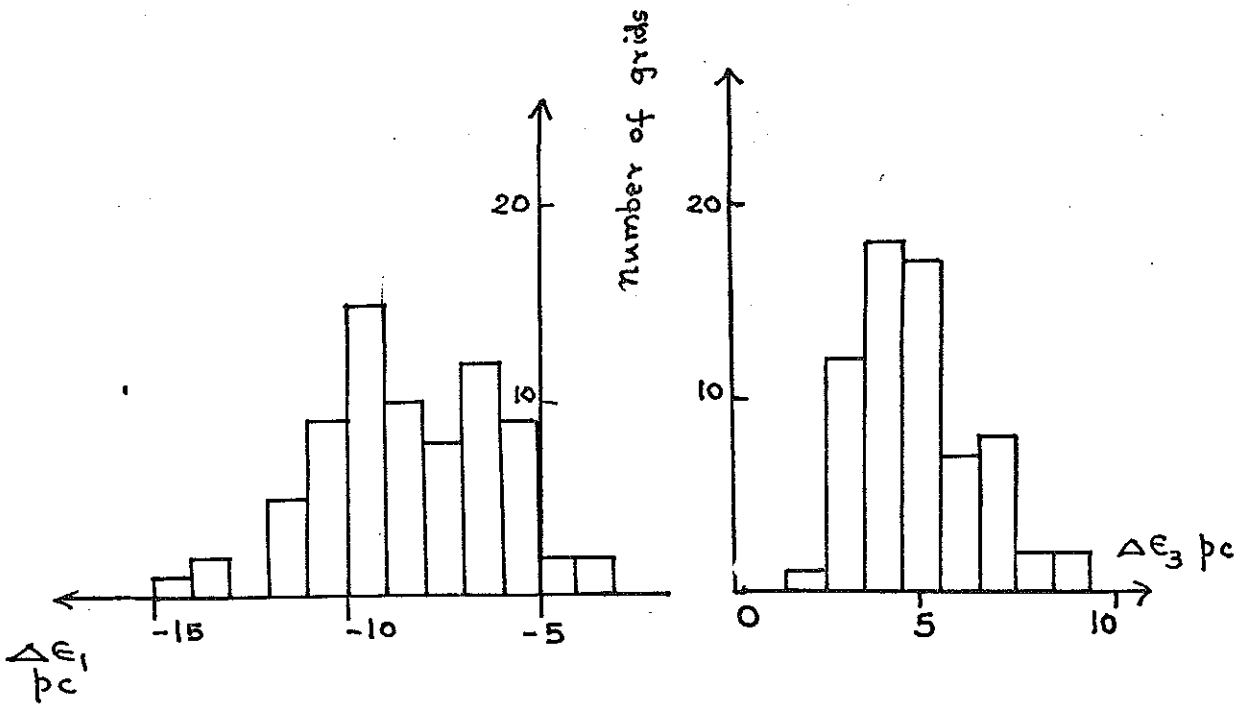
(ii) $\eta = 0.16$ $\Delta\eta = 0.15$



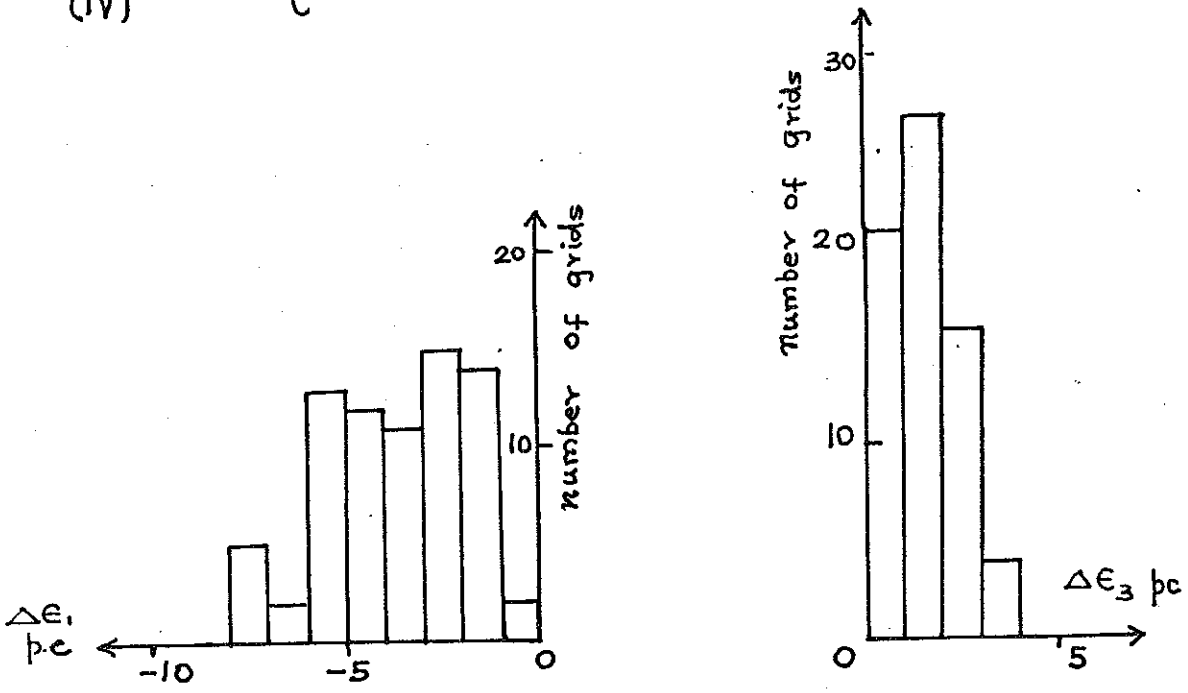


(iii) $\eta = 0.31$ $\Delta\eta = 0.15$

See overleaf



(iv) $\eta = 0.45$ $\Delta\eta = 0.2$



(v) Progressive failure.

Fig. 3.65 (i)-(v). Histograms representing incremental strain distribution in the grids of the normally consolidated sample OE during a constant p extension test.

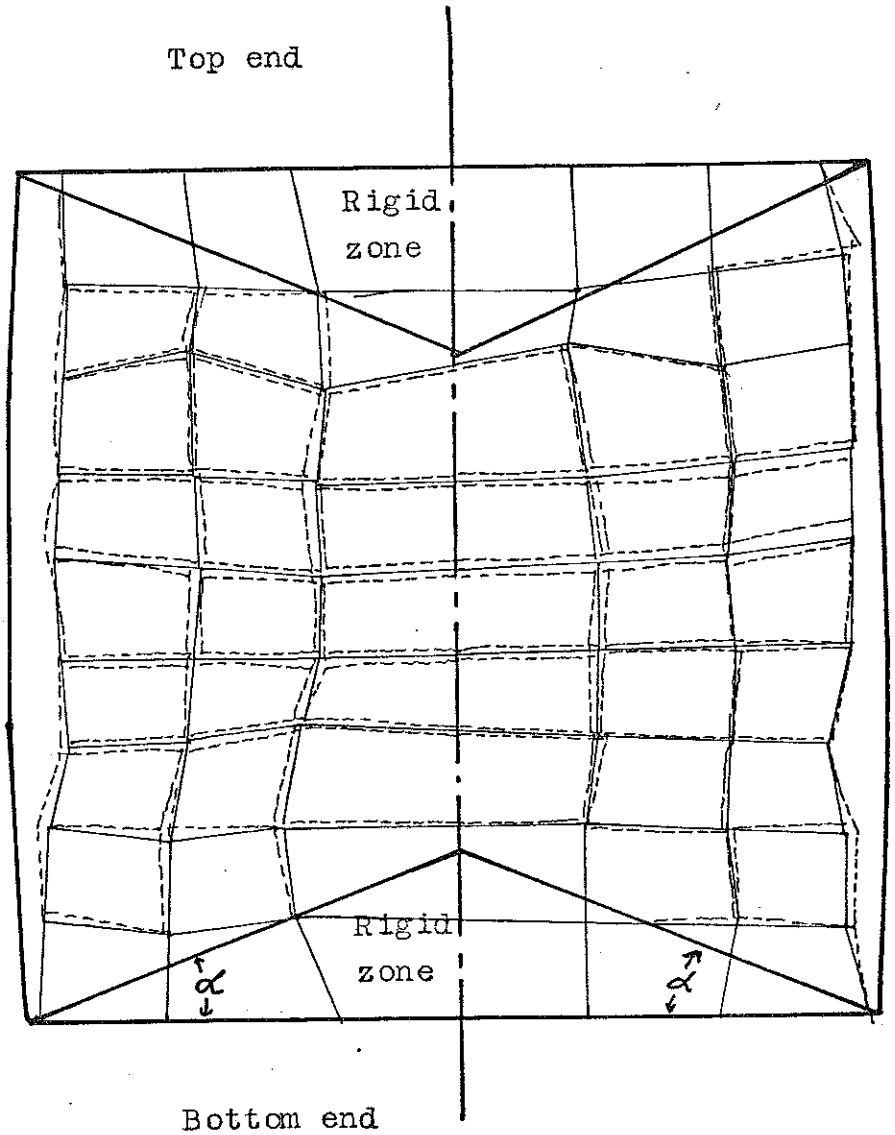


Fig. 3.66. Displacement pattern of grids in plane I of the normally consolidated sample OE during progressive failure in extension.

Full lines indicate initial position of grids.

Dashed lines indicate displaced position of grids.

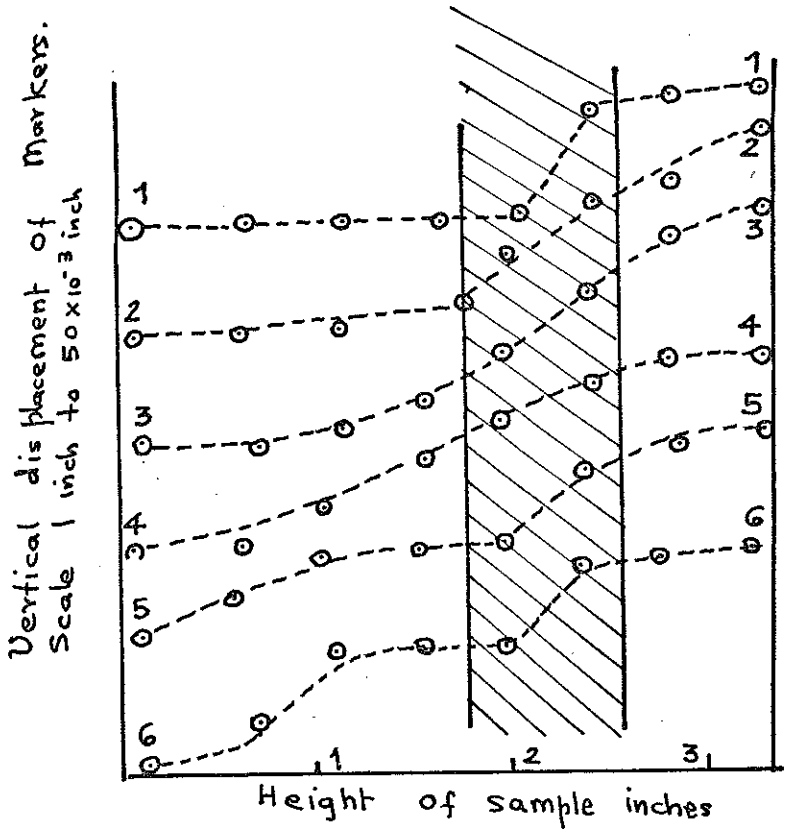


Fig. 3.67 (a). Vertical displacement pattern in specimen OB showing localised region with high axial strain during progressive failure.

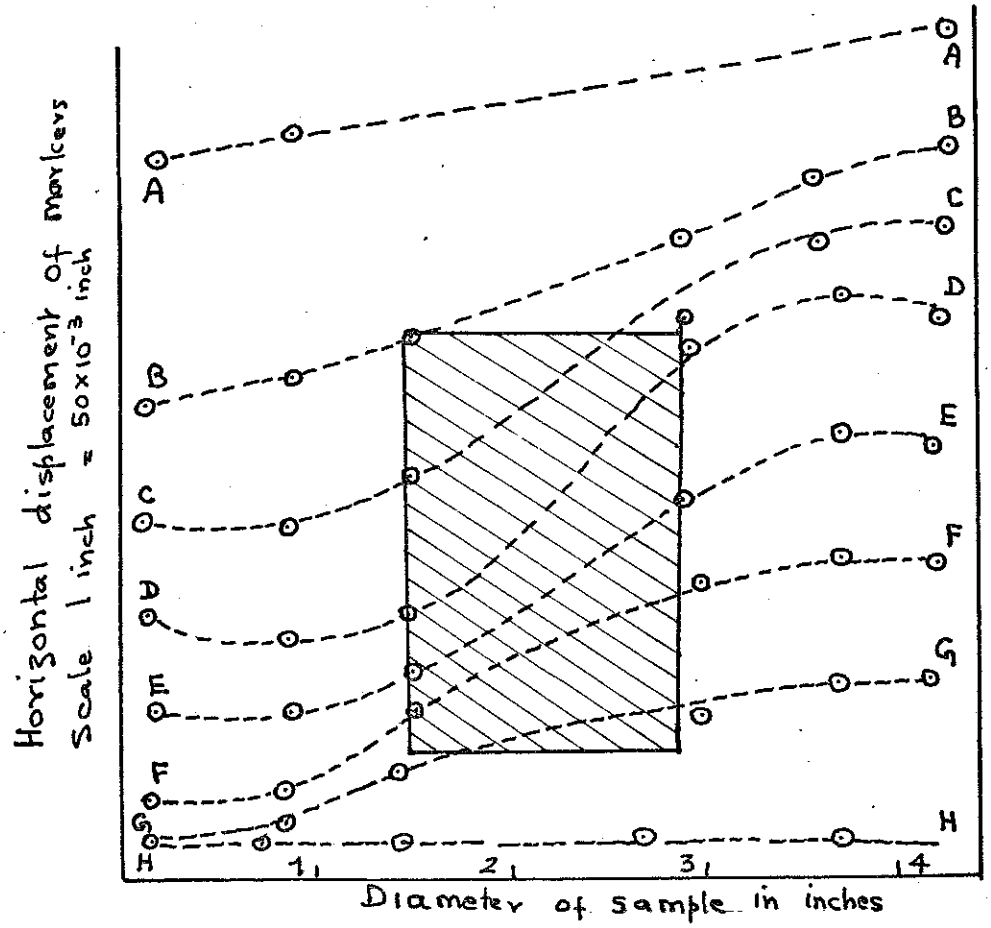


Fig. 3.67 (b). Radial displacement pattern in specimen OB showing localised region with high radial strain during progressive failure.

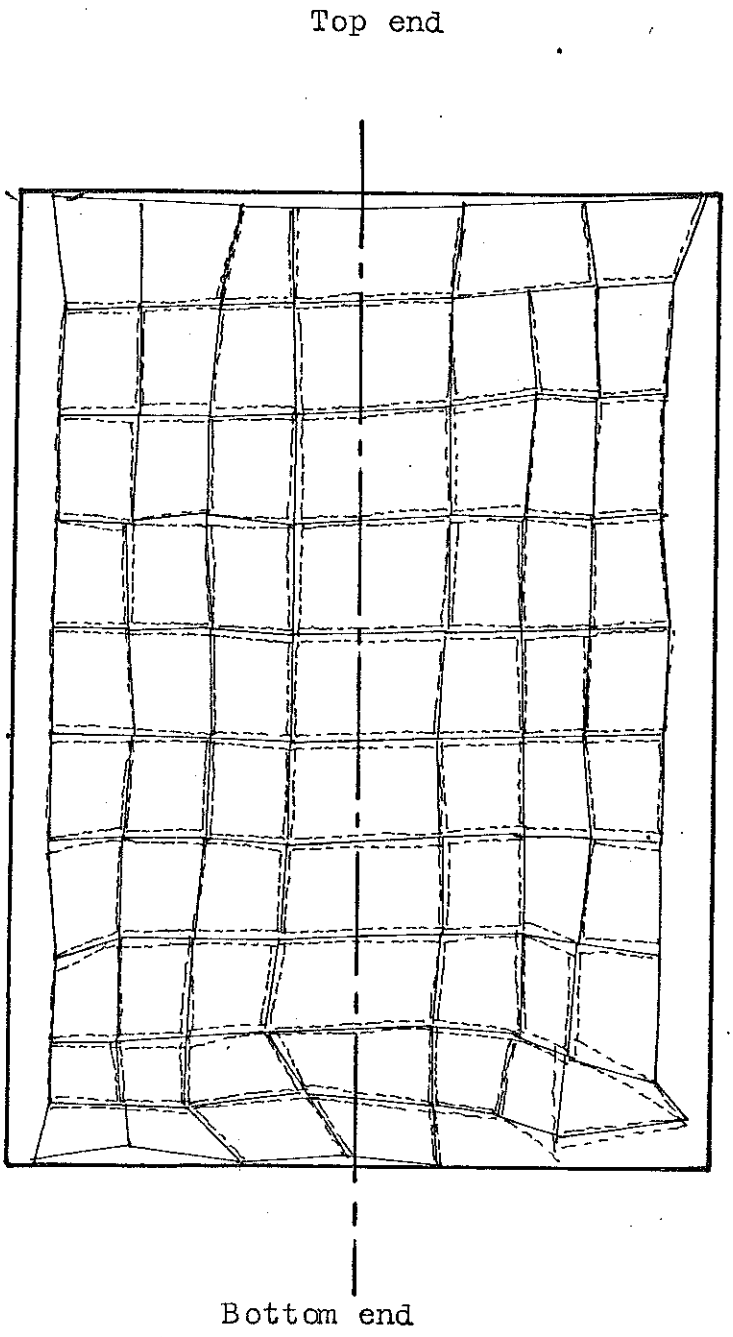


Fig. 3.68. Displacement pattern of grids in plane I of the normally consolidated sample OB during progressive failure.

Full lines indicate initial position of grids.

Dashed lines indicate displaced position of grids.

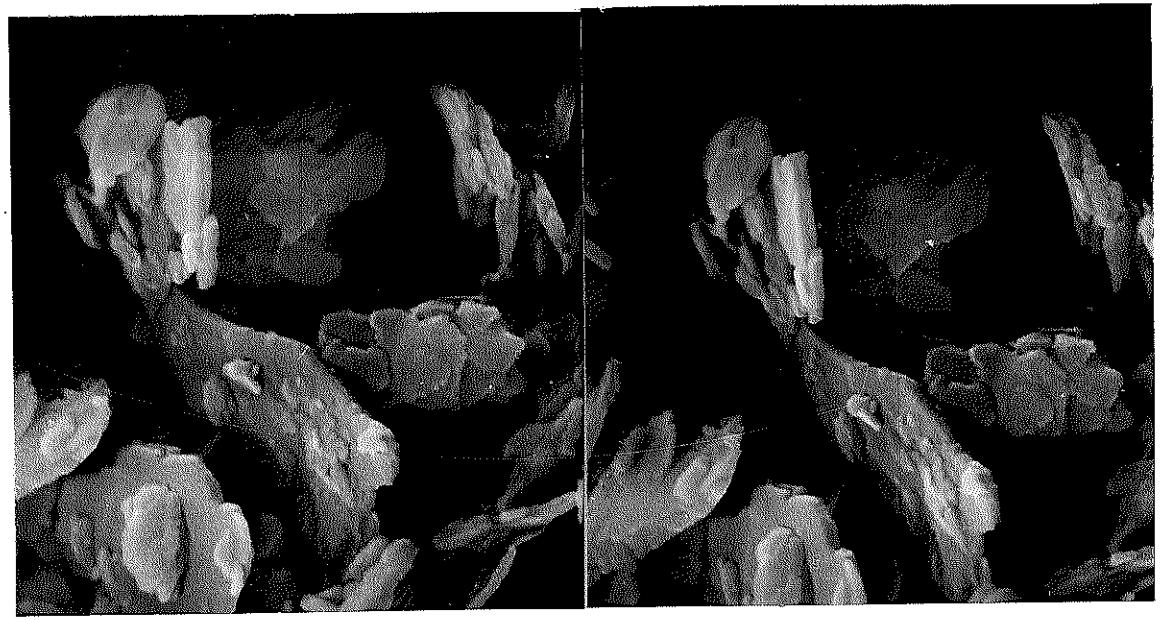


Fig. 3.69 Micrographs of a freeze dried specimen of the slurry (160% moisture content) taken from pug mill

Magnification = 9200 X
Average tilt angle = 45°
Stereoscopic angle = 10°

Coating:
100 Å Carbon
200 Å Gold.

Fig. 3.70. Micrographs of a freeze, dried specimen of the sample at the end of 1-D consolidation. (22 psi)

Magnification = 5100 X

Average tilt angle = 90°

Stereoscopic angle = 10°

Coating:

100 Å Carbon

200 Å Gold.

Fig. 3.71. Micrographs of a air dried specimen of the sample at the end of 1-D consolidation under 22 psi and subsequent isotropic consolidation to 60 psi.

Magnification = 5350 ×
Average tilt angle = 50°
Stereoscopic angle = 10°

Coating.
100 Å Carbon
200 Å Gold.

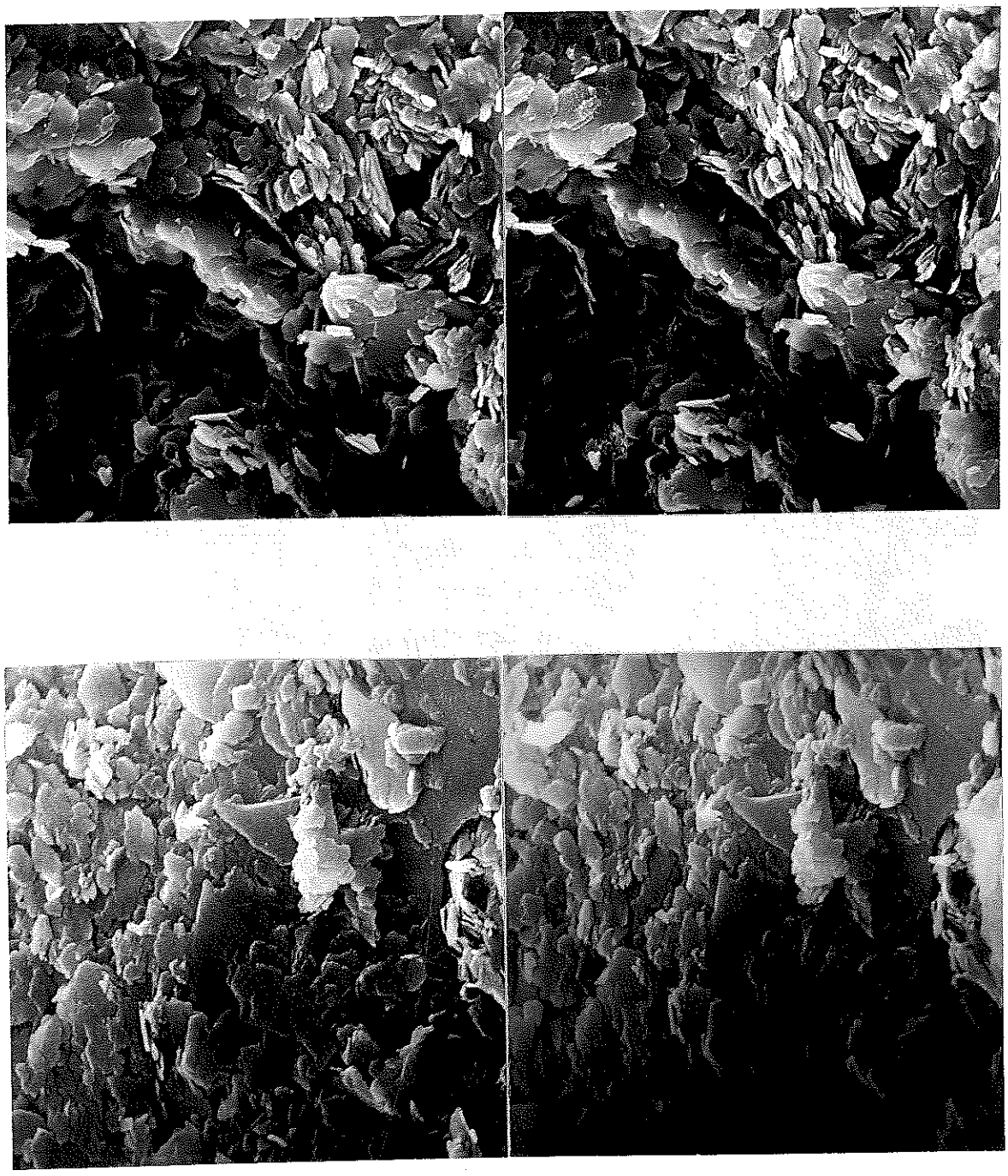


Fig. 3.72. Micrographs of an oven-dried specimen of the sample showing a typical failure plane.

Magnification = 5250 X
Average tilt angle = 65
Stereoscopic angle = 10

Coating
100 Å Carbon
200 Å Gold

Failure plane

Fig. 3.73. Micrographs of an oven-dried specimen of the sample showing a typical failure zone.

Magnification = 4975 X
Average tilt angle = 45°
Stereoscopic angle = 10°

Coating
100 Å Carbon
200 Å gold

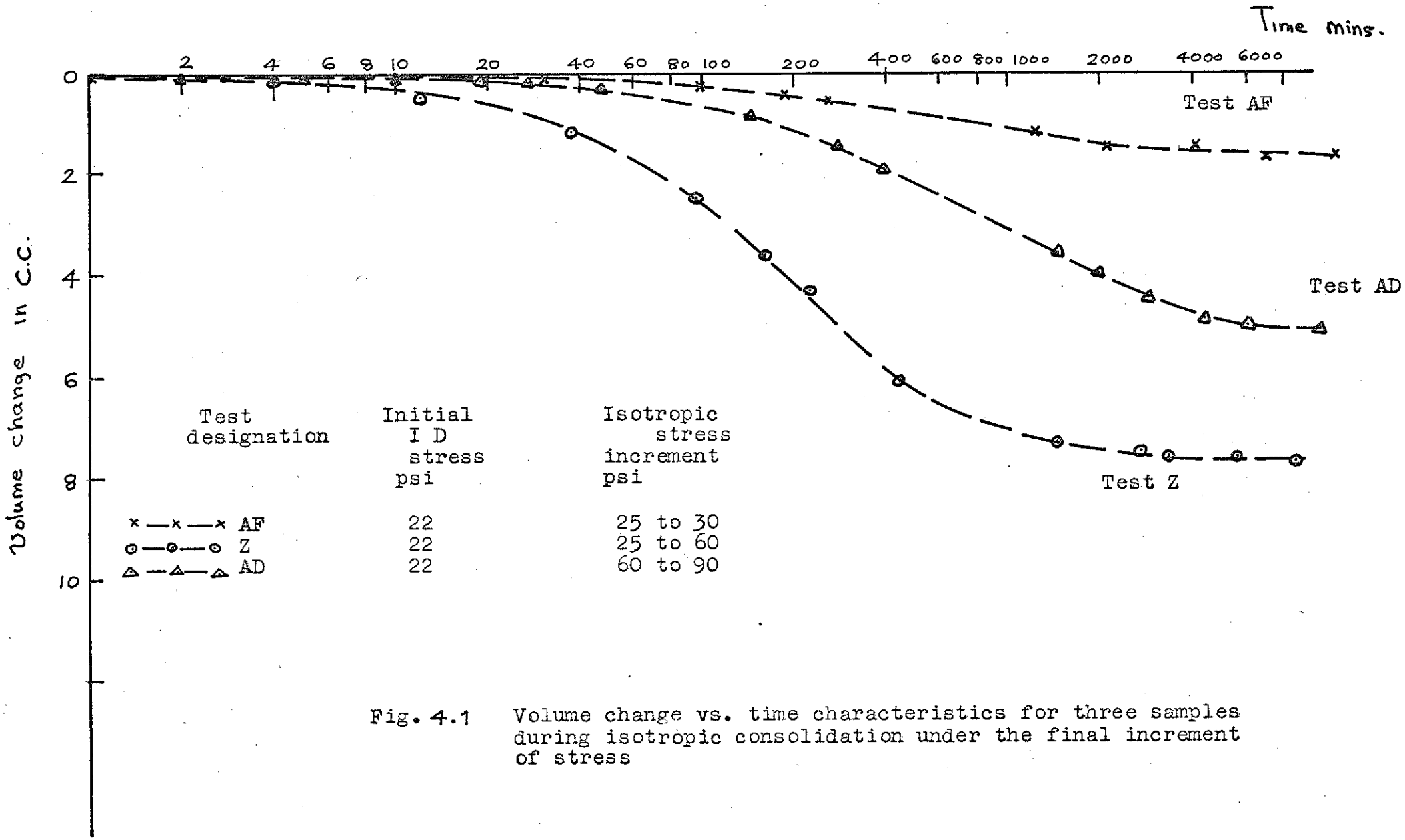


Fig. 4.1 Volume change vs. time characteristics for three samples during isotropic consolidation under the final increment of stress

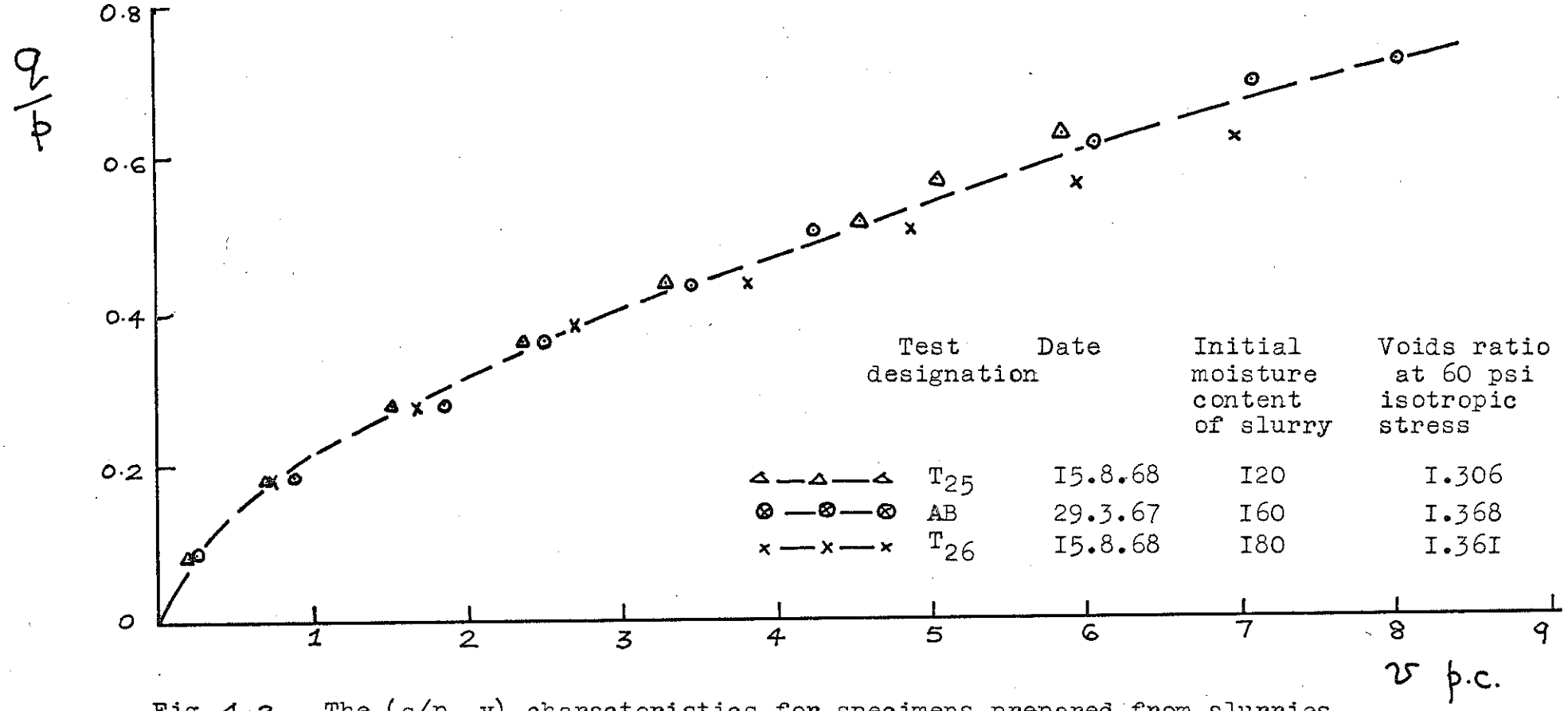


Fig. 4·2 The (q/p, v) characteristics for specimens prepared from slurries with different initial moisture contents and sheared under fully drained condition with constant cell pressure.

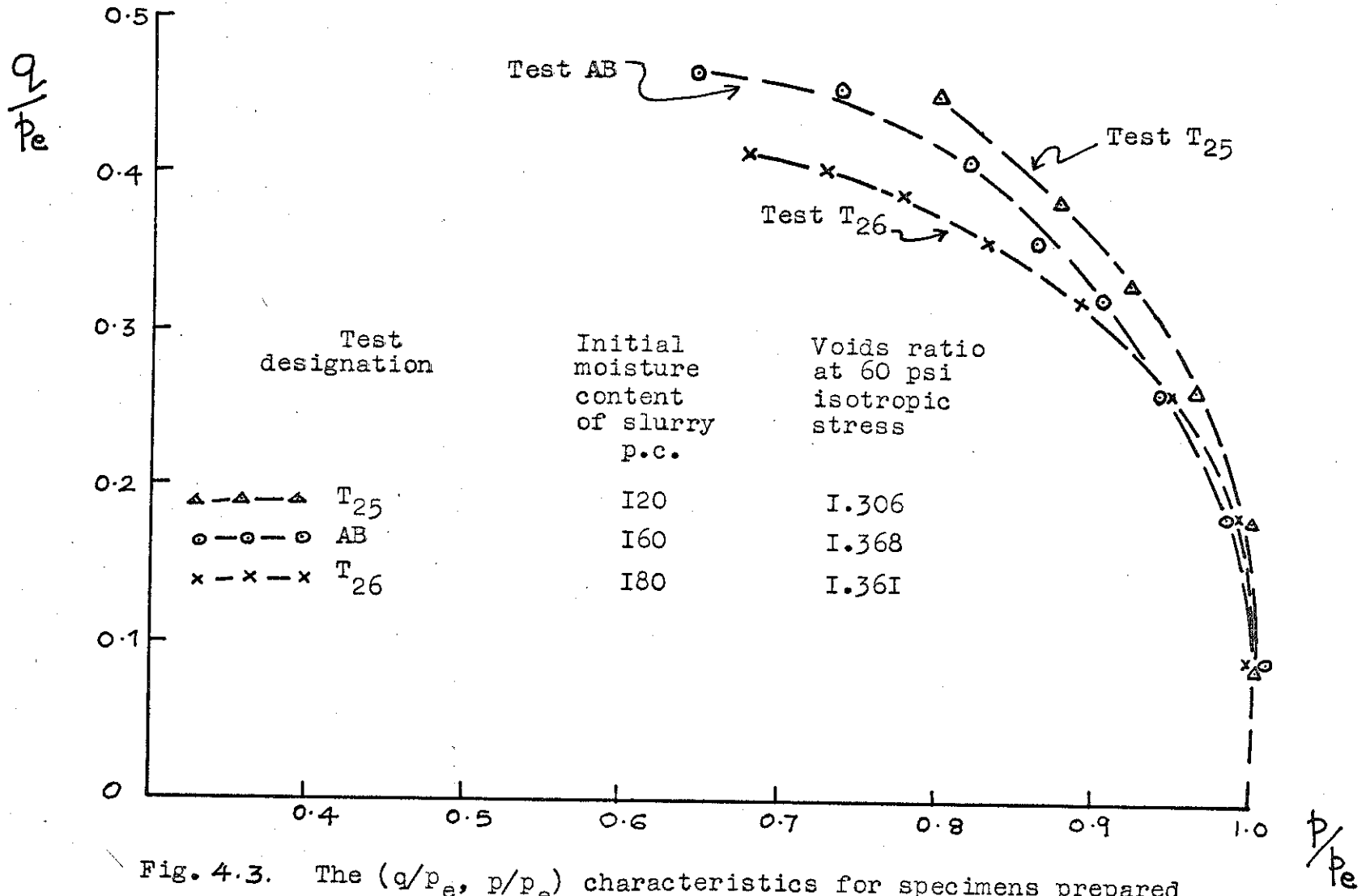


Fig. 4.3. The (q/p_e, p/p_e) characteristics for specimens prepared from slurries with different initial moisture contents and sheared under fully drained condition with constant cell pressure.

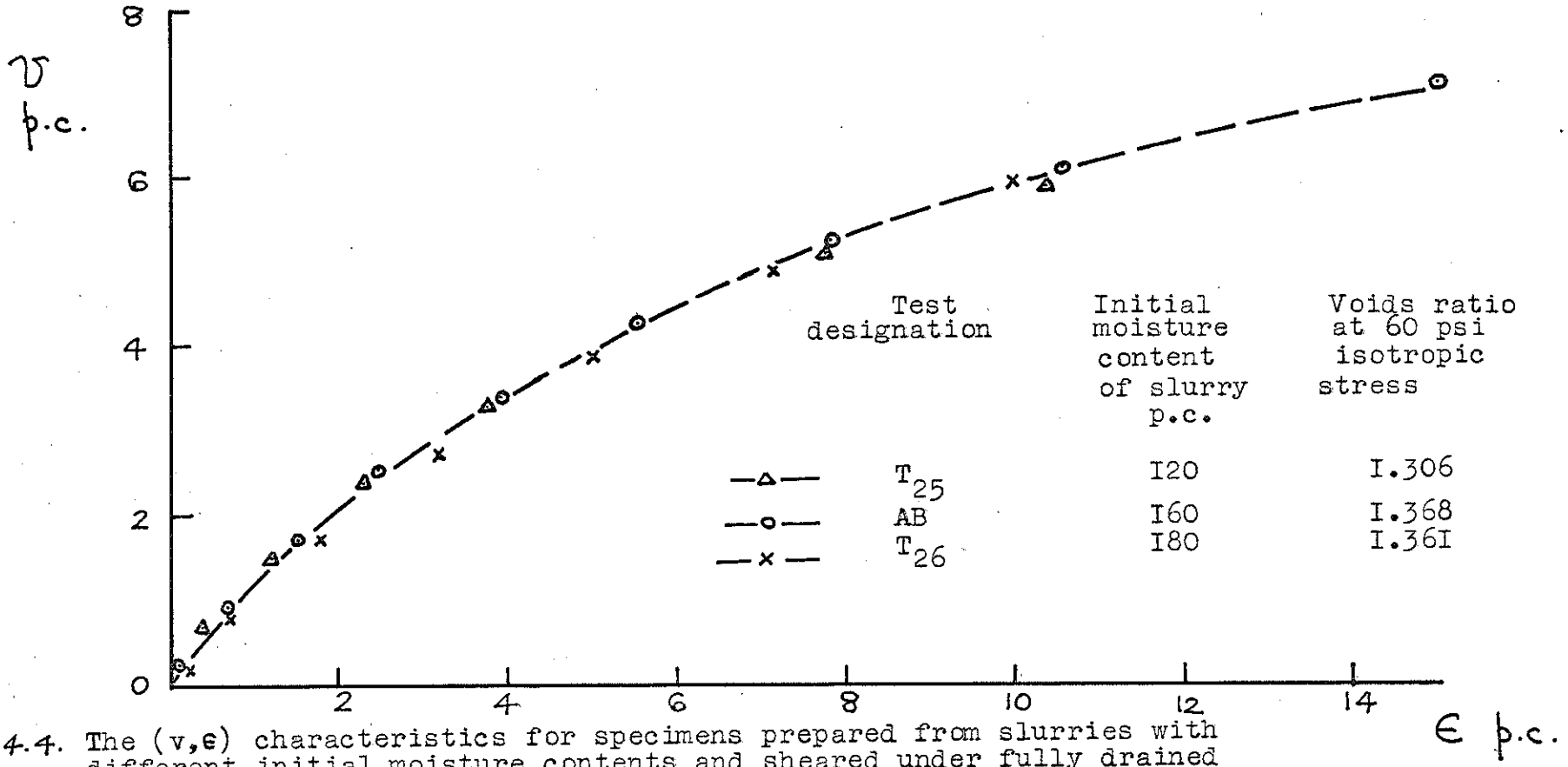


Fig.4.4. The (v,ε) characteristics for specimens prepared from slurries with different initial moisture contents and sheared under fully drained condition with constant cell pressure.

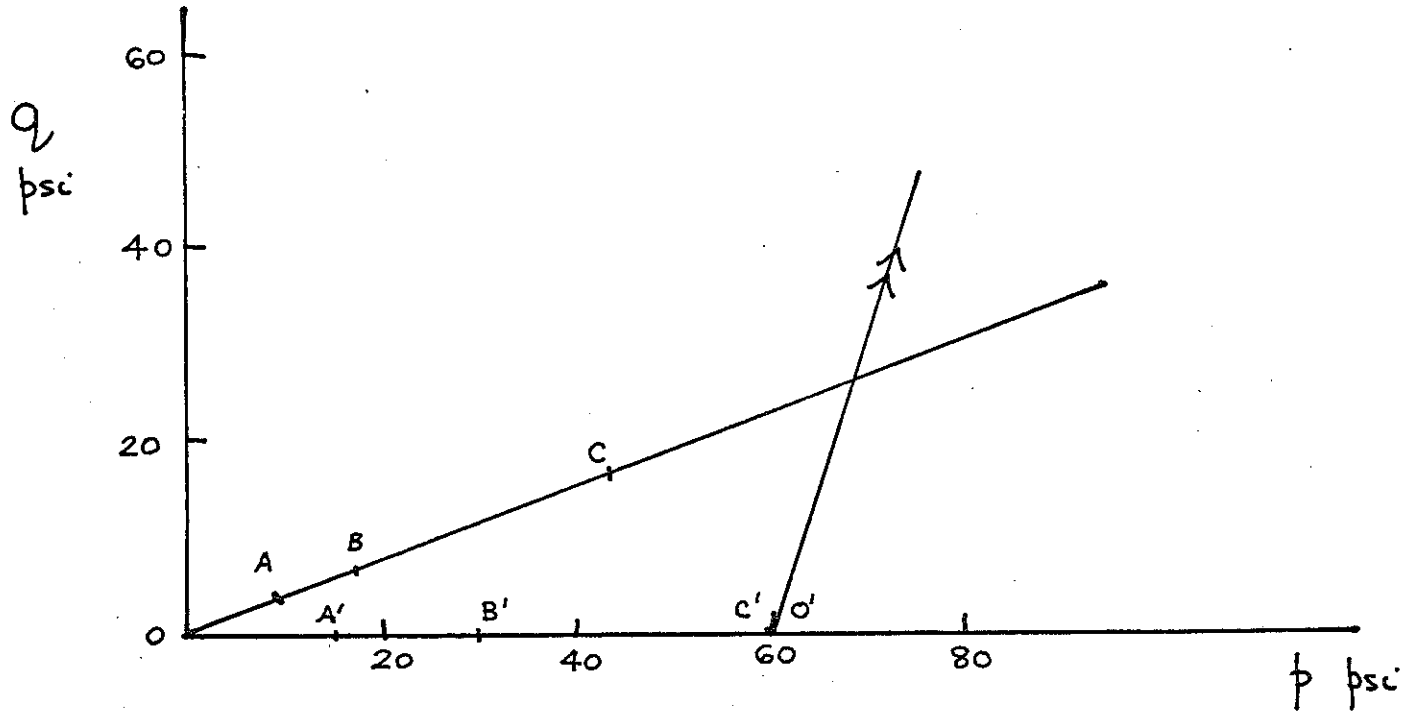


Fig. 4.5. The states of three specimens in the (q,p) stress plane at the end of I-D consolidation and isotropic consolidation.

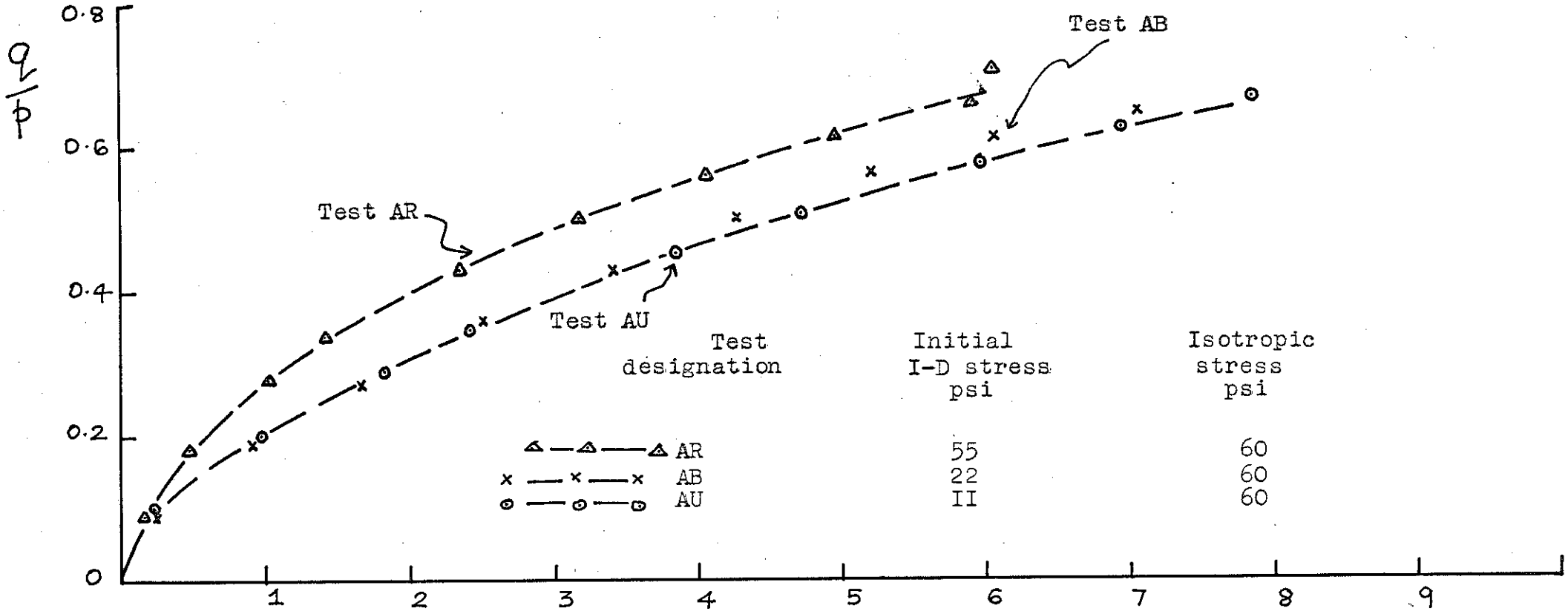


Fig. 4·6. The (q/p, v) characteristics of specimens prepared with different initial I-D stresses and sheared under fully drained condition from an isotropic stress of 60 psi with constant cell pressure.

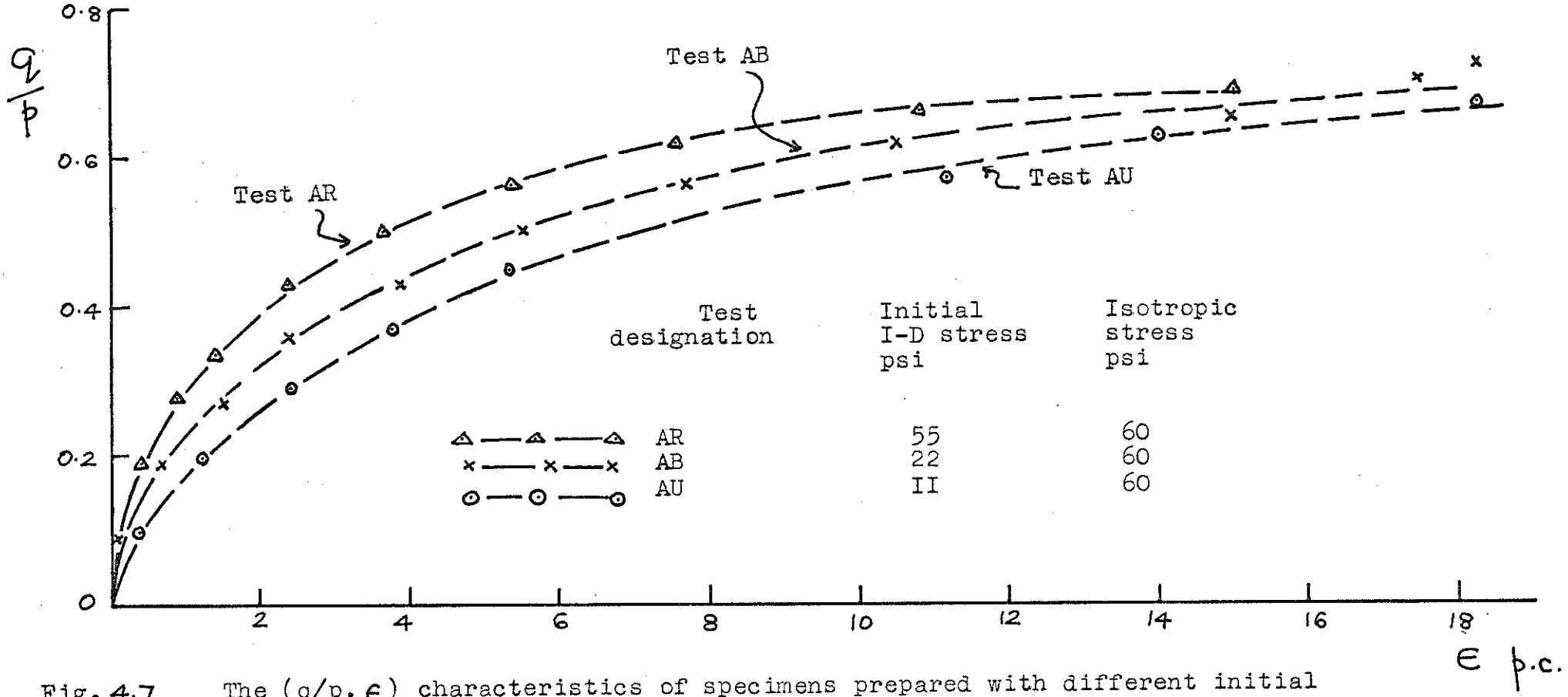


Fig. 4.7 The (q/p, ϵ) characteristics of specimens prepared with different initial I-D stresses and sheared under fully drained condition from an isotropic stress of 60 psi with constant cell pressure.

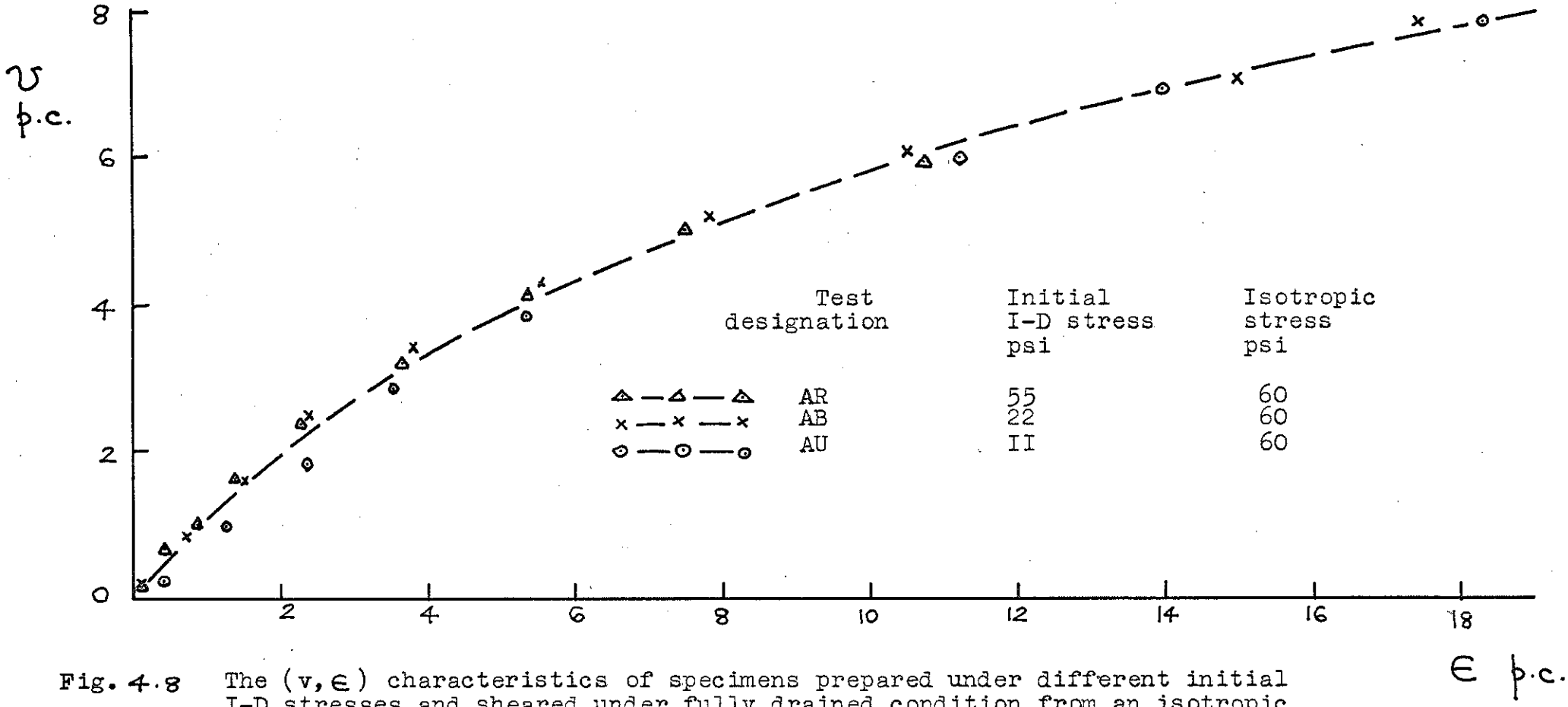


Fig. 4.8 The (v, ∈) characteristics of specimens prepared under different initial I-D stresses and sheared under fully drained condition from an isotropic stress of 60 psi with constant cell pressure.

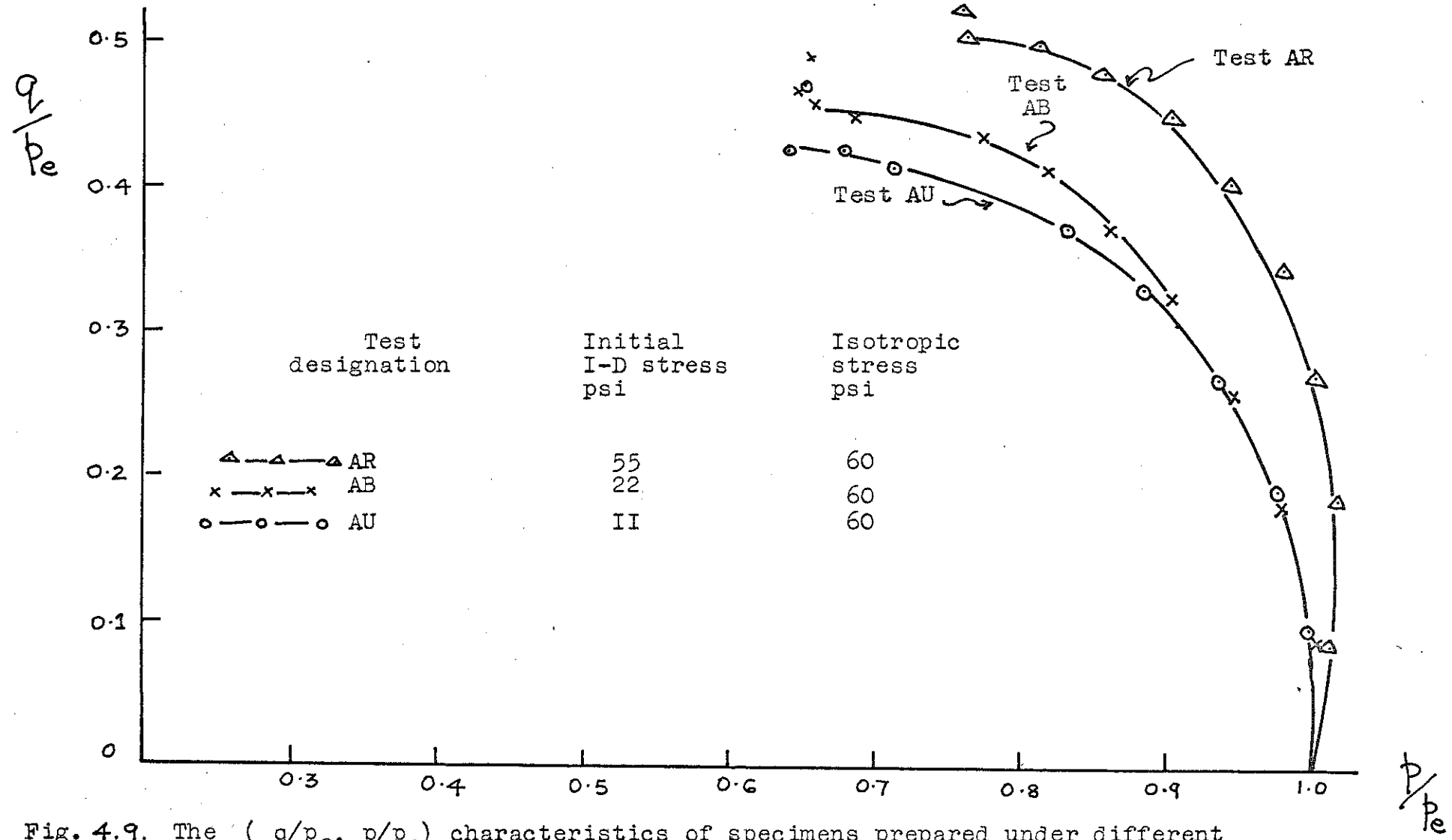


Fig. 4.9. The (q/p_e, p/p_e) characteristics of specimens prepared under different initial I- D stresses and sheared under fully drained condition from an isotropic stress of 60 psi with constant cell pressure.

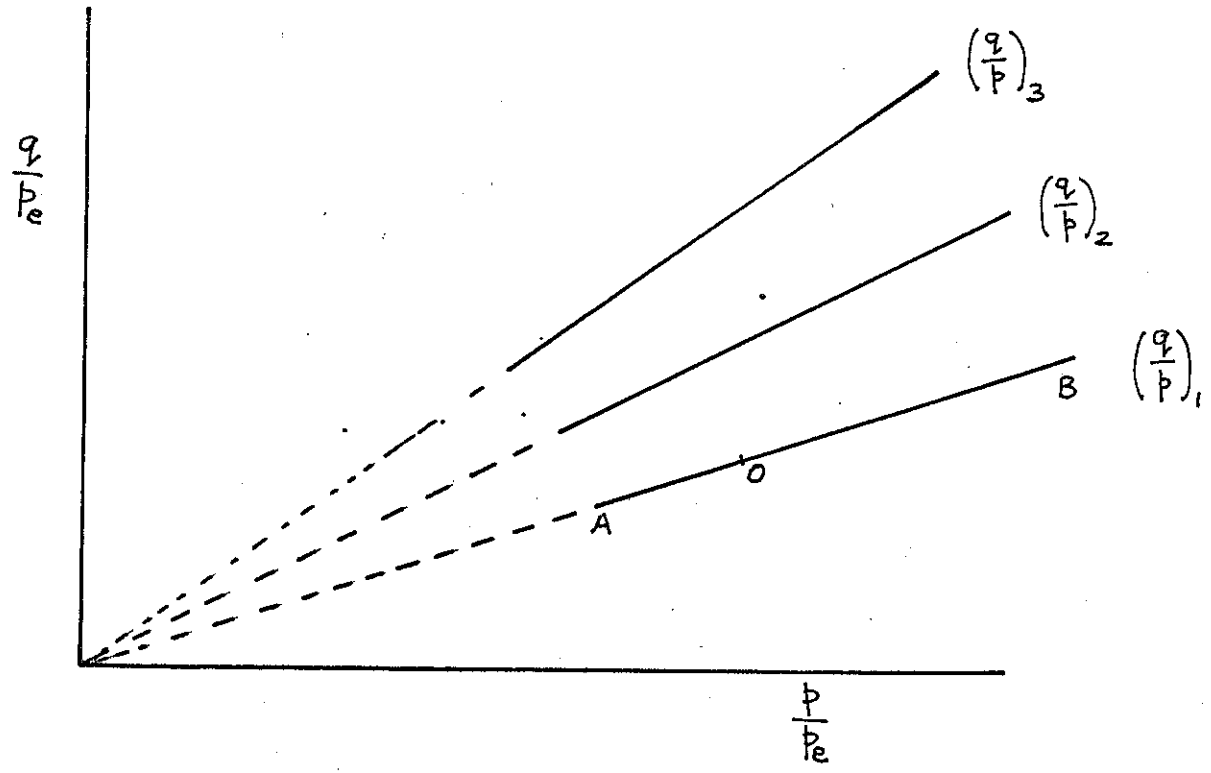


Fig. 4.10. Contours of constant (q/p) in the $(q/p_e, p/p_e)$ plot.

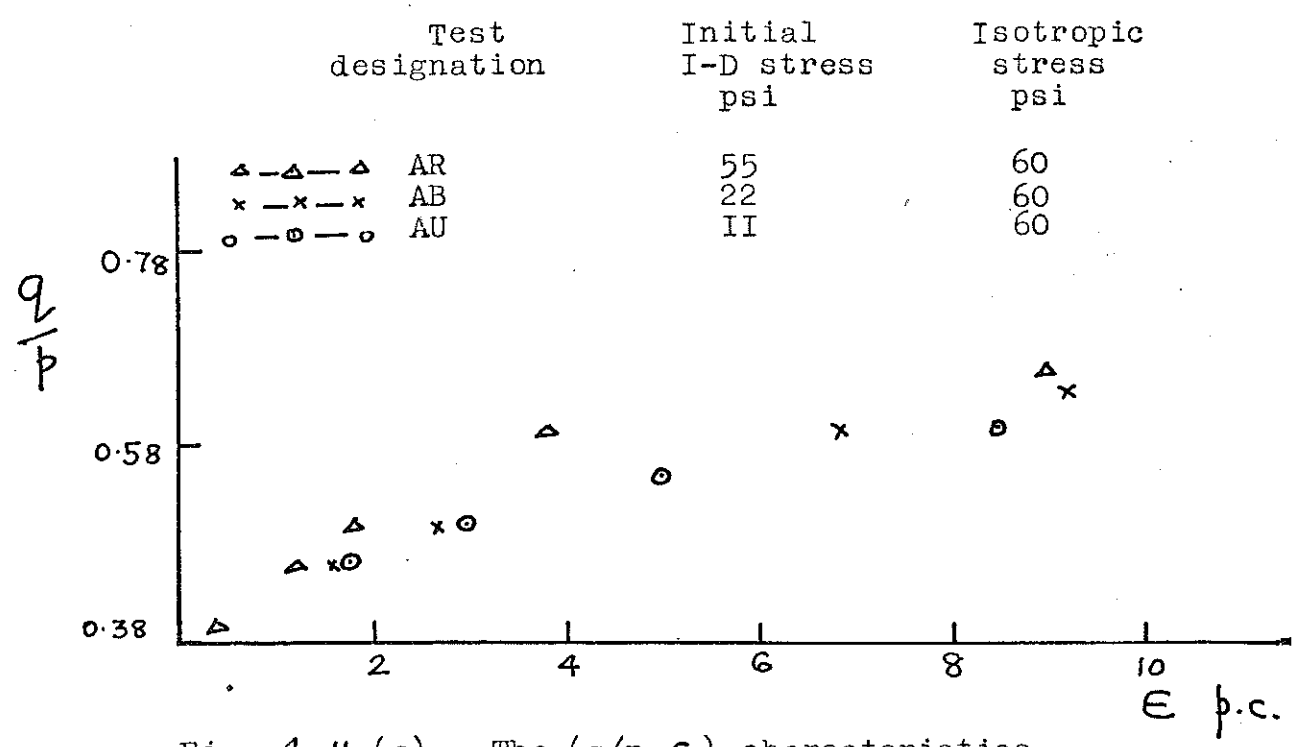


Fig. 4.11.(a) The (q/p, ∈) characteristics beyond a stress ratio of 0.375

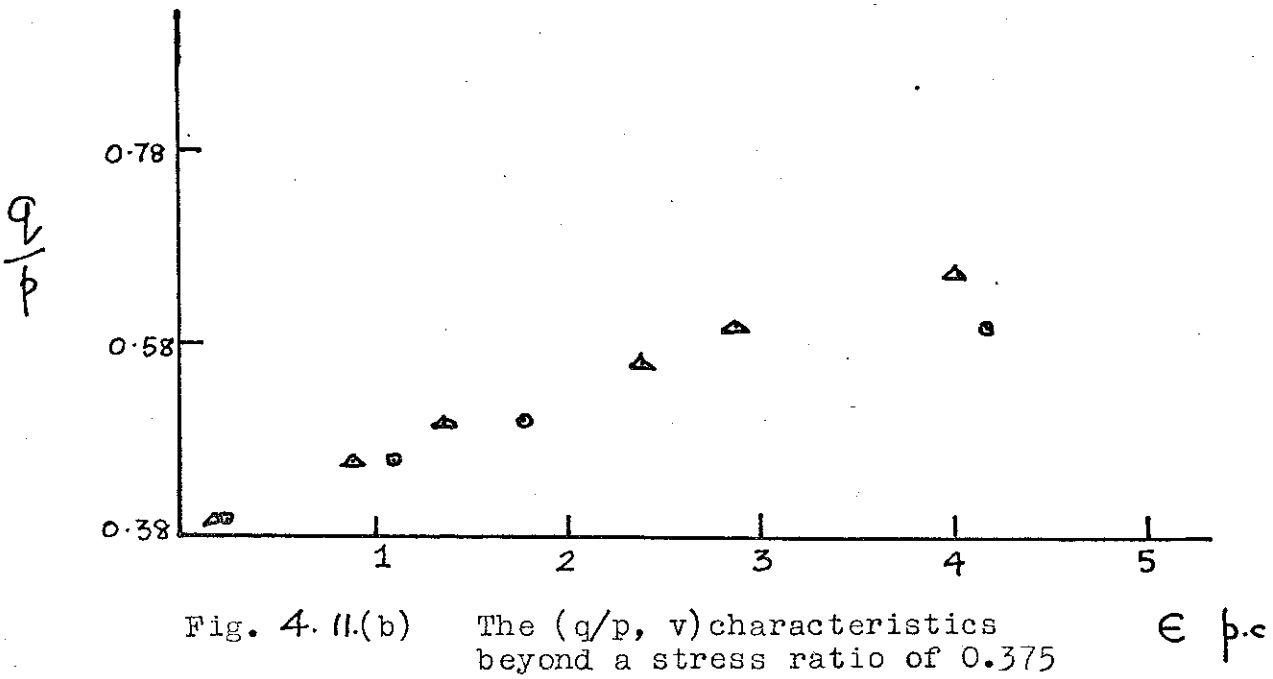


Fig. 4.11.(b) The (q/p, v) characteristics beyond a stress ratio of 0.375

Fig. 4.11.(a) and (b) The (q/p, ∈) and (q/p, v) characteristics of specimens AR, AB and AU for stress ratios higher than 0.375.

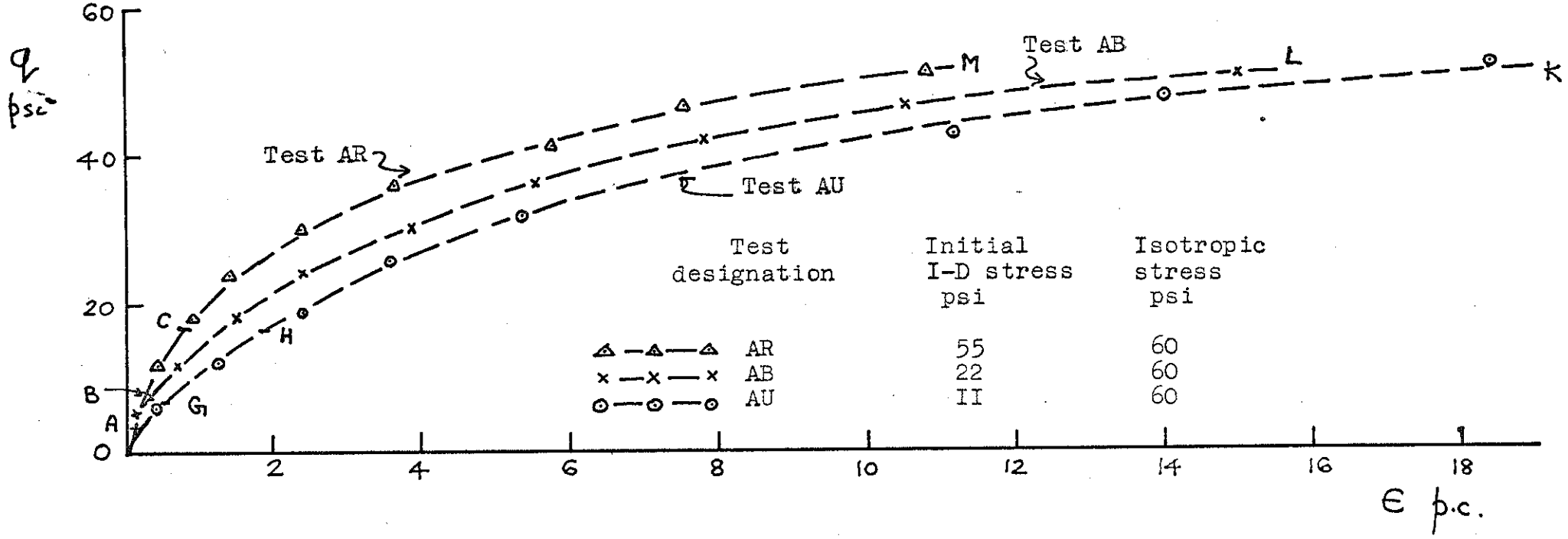


Fig. 4.12 The (q, ε) characteristics of specimens prepared under different initial I-D stresses and sheared under fully drained condition from an isotropic stress of 60 psi with constant cell pressure.

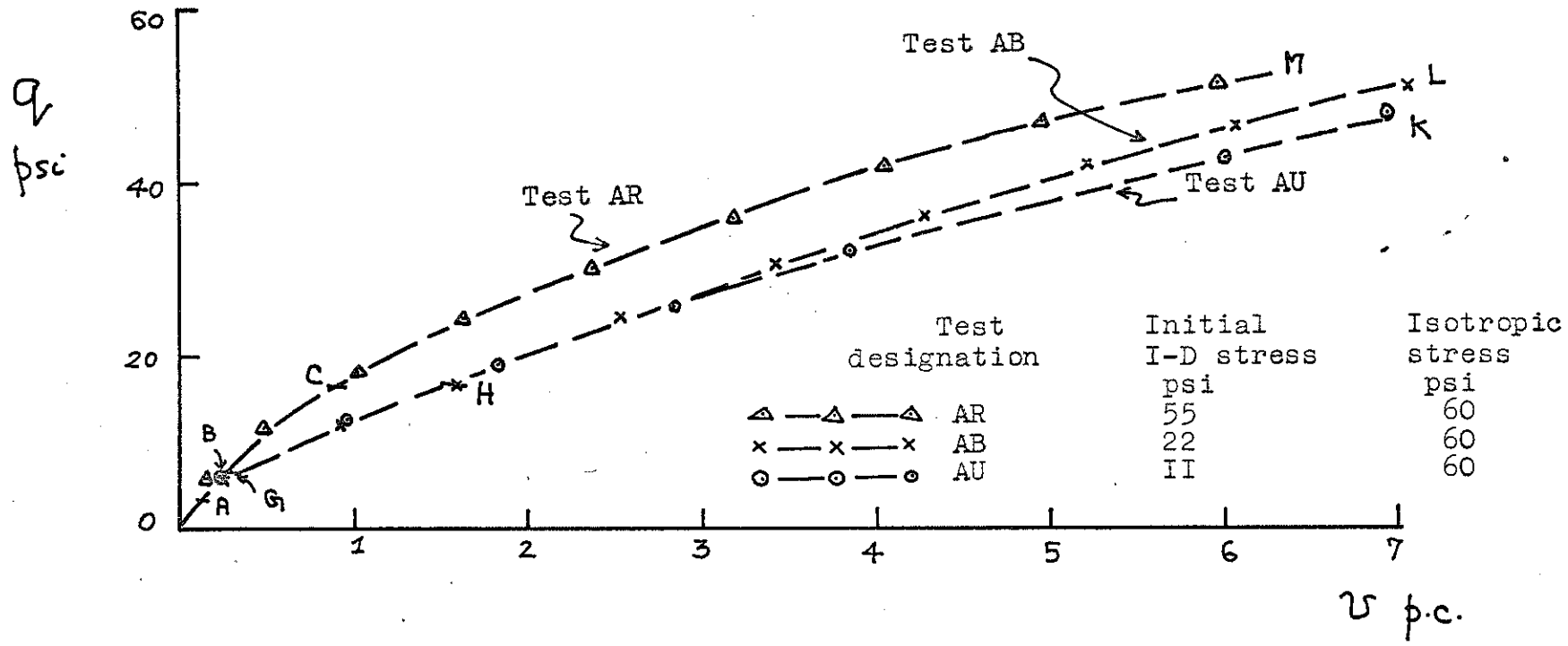


Fig. 4.13. The (q,v) characteristics of specimens prepared under different initial I-D stresses and sheared under fully drained condition from an isotropic stress of 60 psi with constant cell pressure.

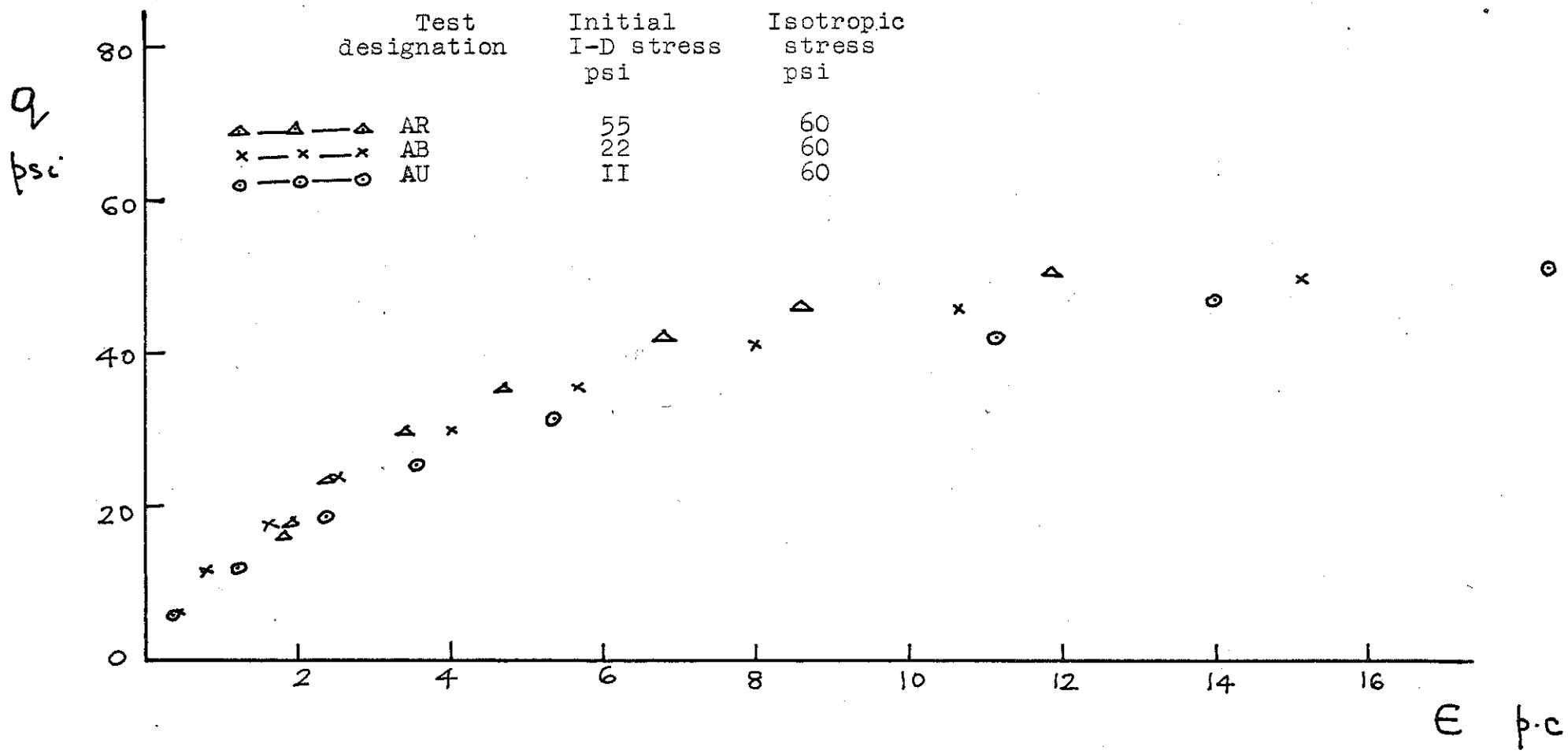


Fig. 4.14 The (q,ε) characteristic of specimen AU and the modified (q,ε) characteristics of specimens AR and AB.

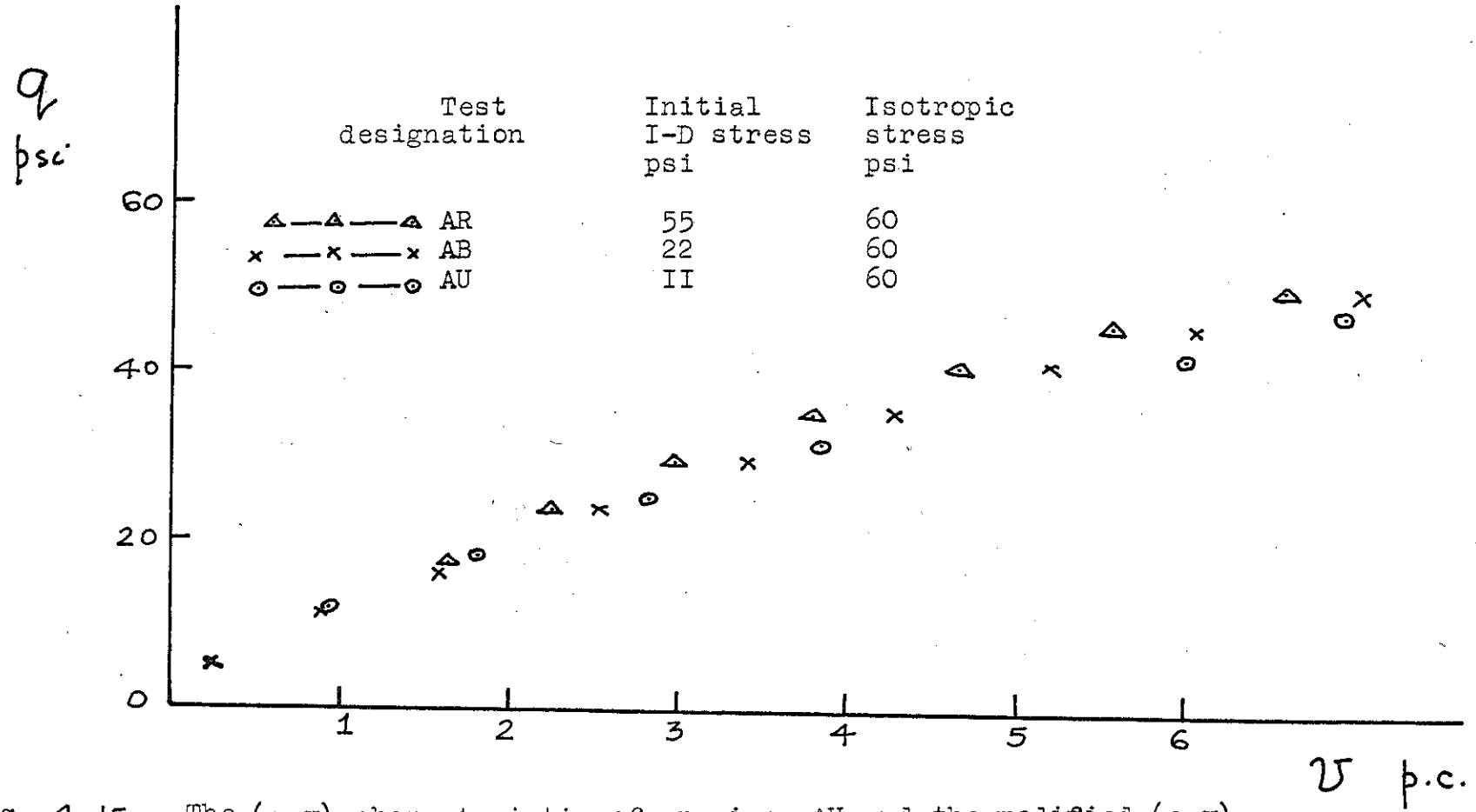


Fig. 4.15 The (q,v) characteristic of specimen AU and the modified (q,v) characteristics of specimens AR and AB.