

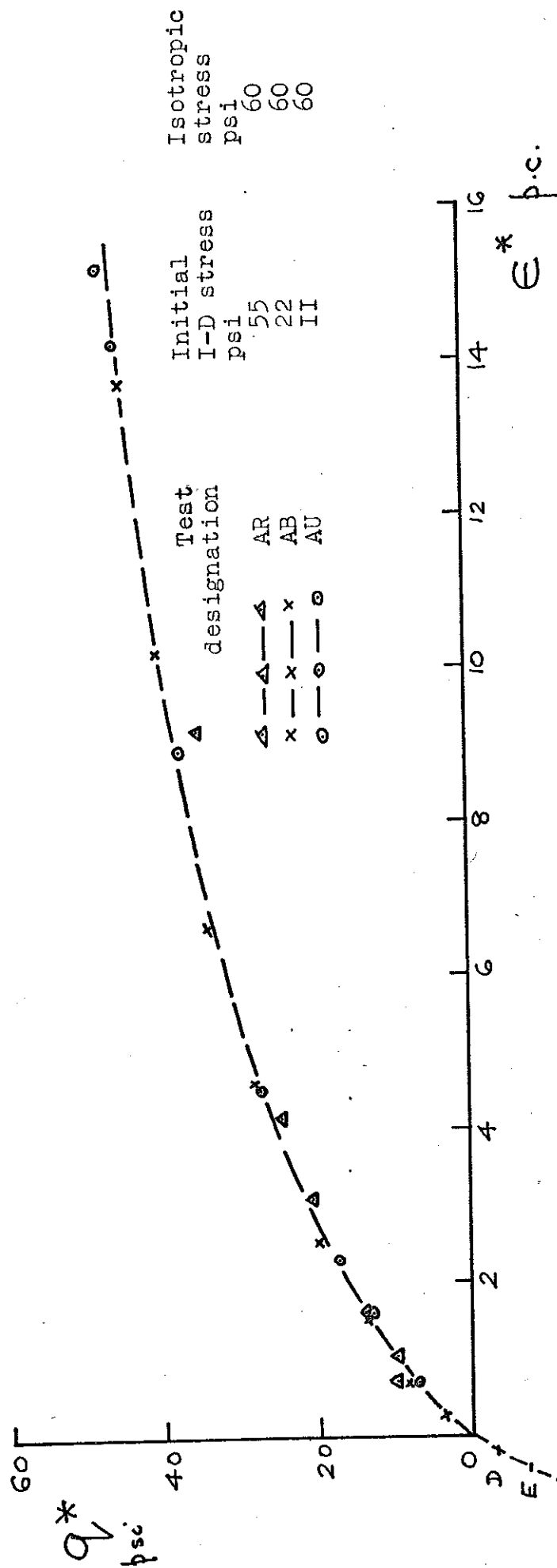


Fig. 4.16. The (q^*, E^*) characteristics of specimens AR, AB and AU prepared under different initial I-D stresses and sheared under fully drained condition from an isotropic stress of 60 psi with constant cell pressure.

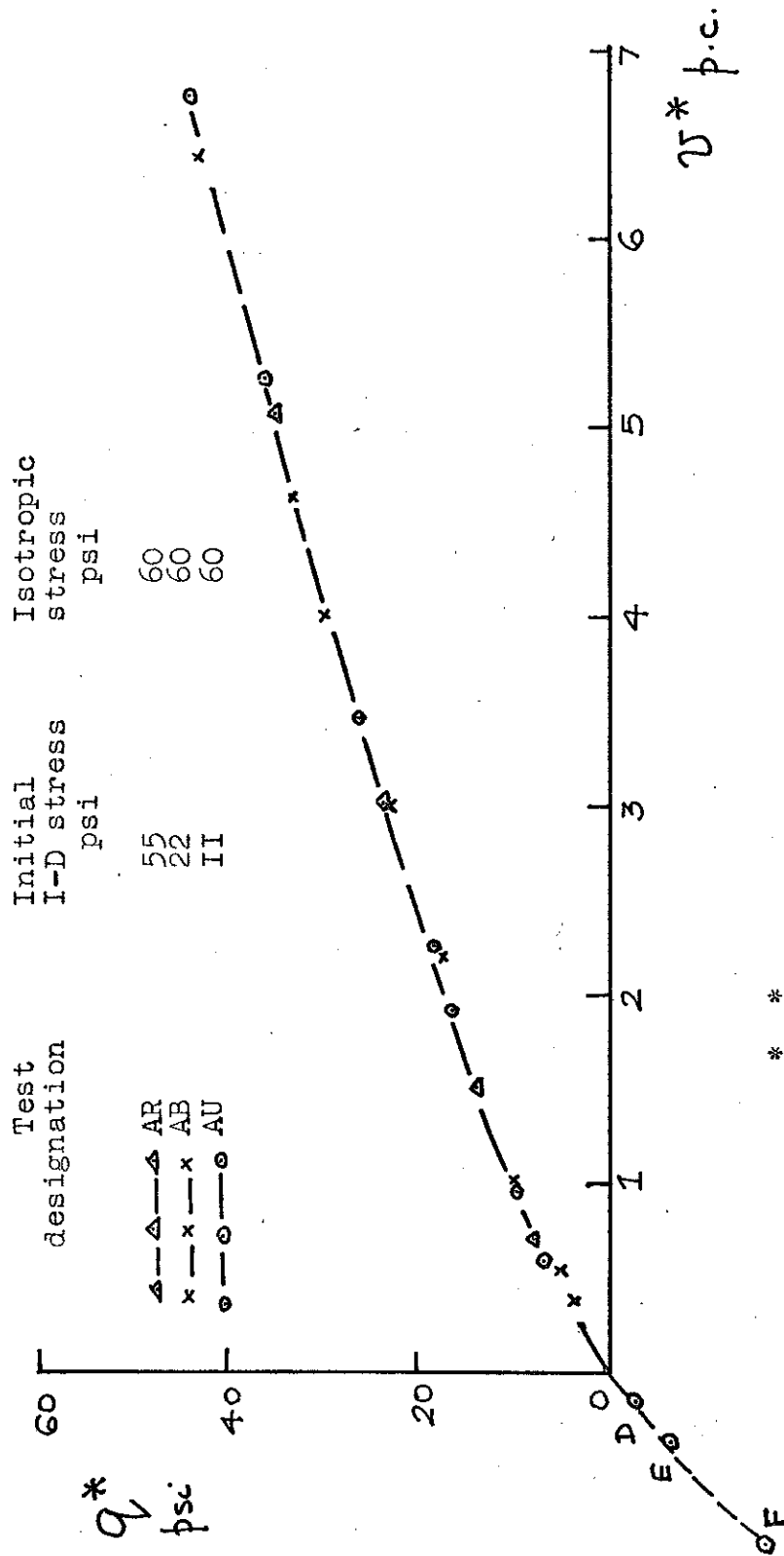


Fig. 4.17. The (q^*, v^*) characteristics of specimens AR, AB and AU prepared under different initial I-D stresses and sheared under fully drained condition from an isotropic stress of 60 psi with constant cell pressure.

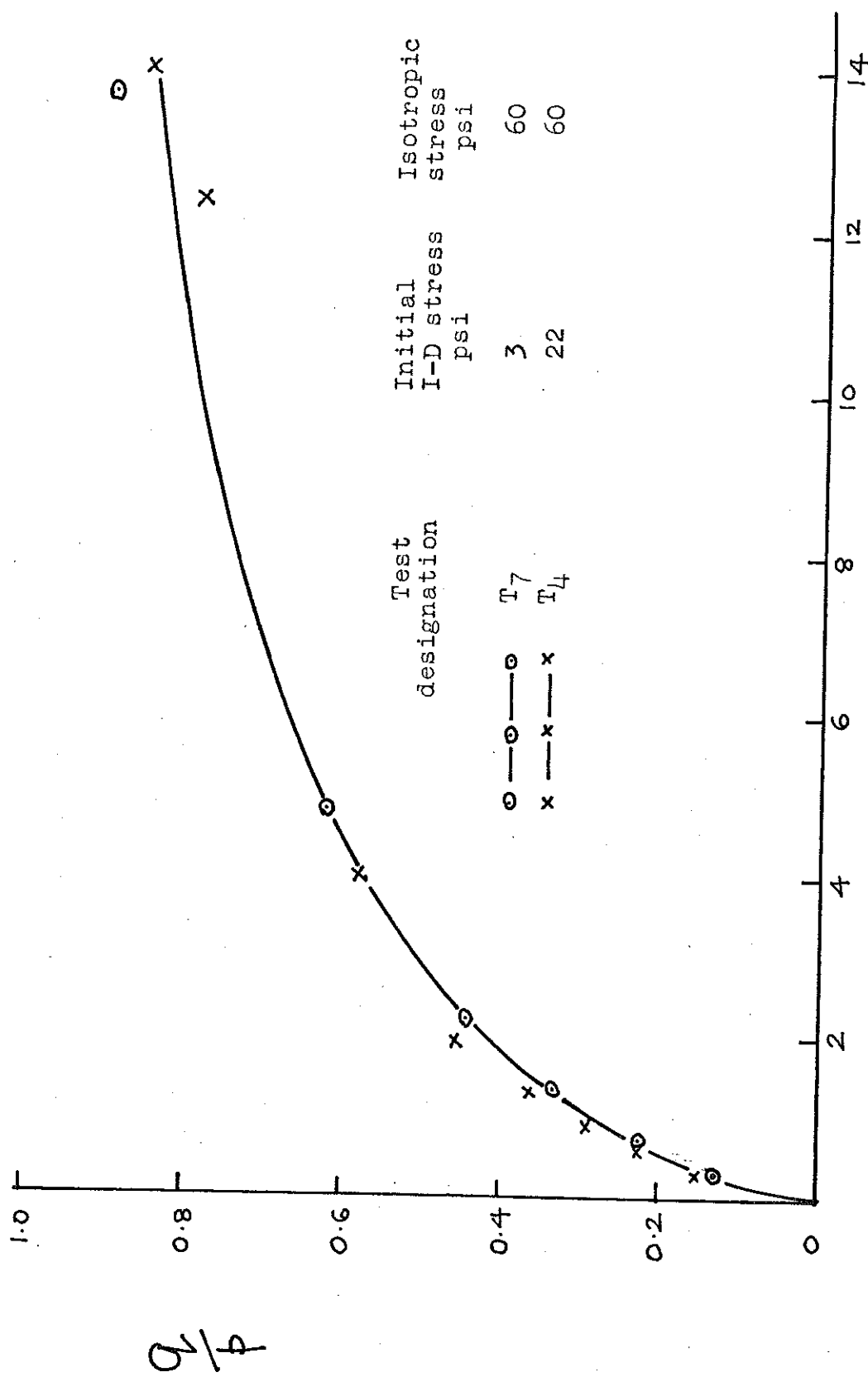


Fig. 4.18 The $(q/p, \epsilon)$ characteristics of specimens prepared under different initial I-D stresses and sheared under undrained condition from an isotropic stress of 60 psi with constant cell pressure.

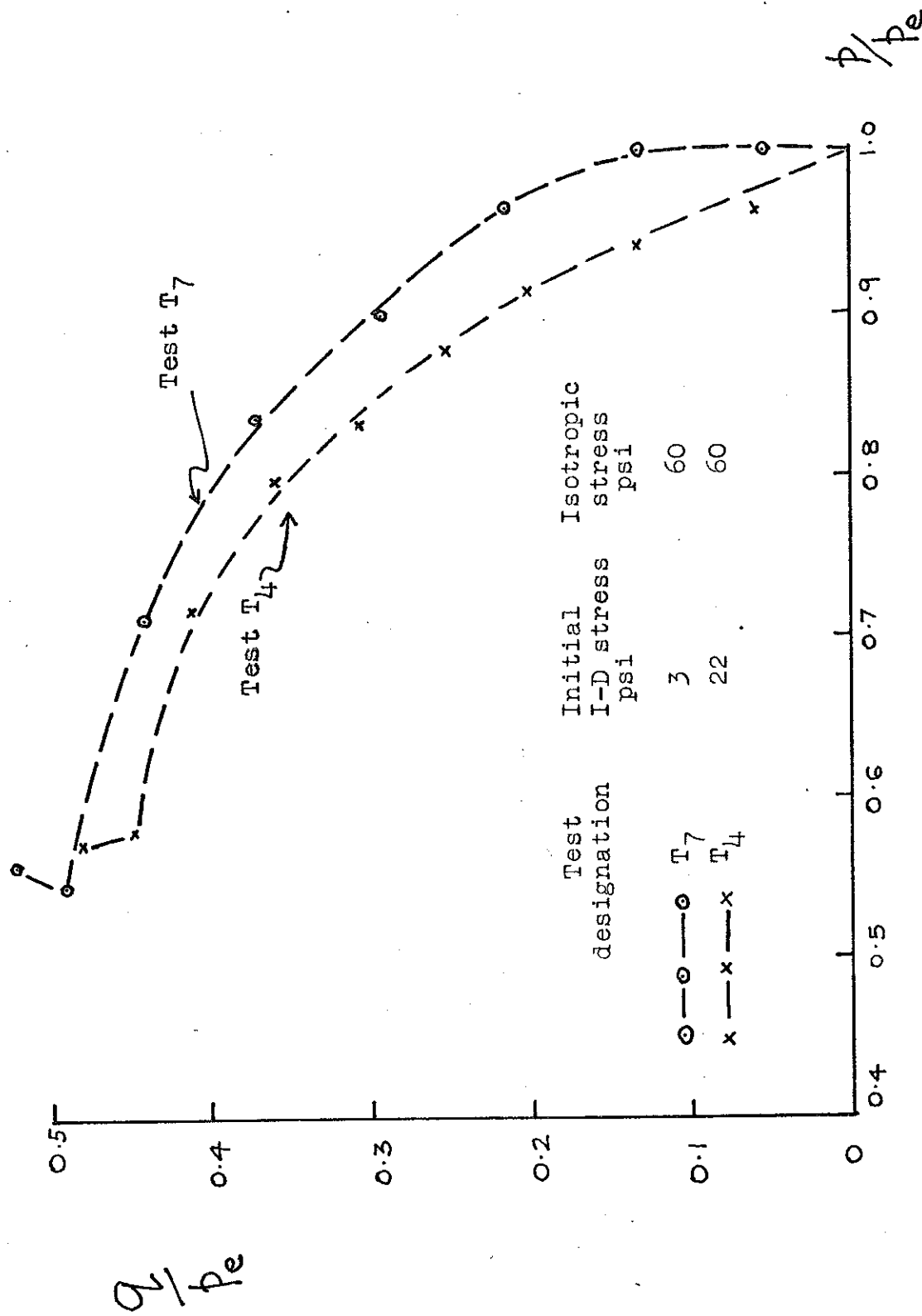


Fig. 4.19. The $(q/p_e, p/p_e)$ characteristics of specimens prepared under different initial I-D stresses and sheared under fully drained condition from an isotropic stress of 60 psi with constant cell pressure.

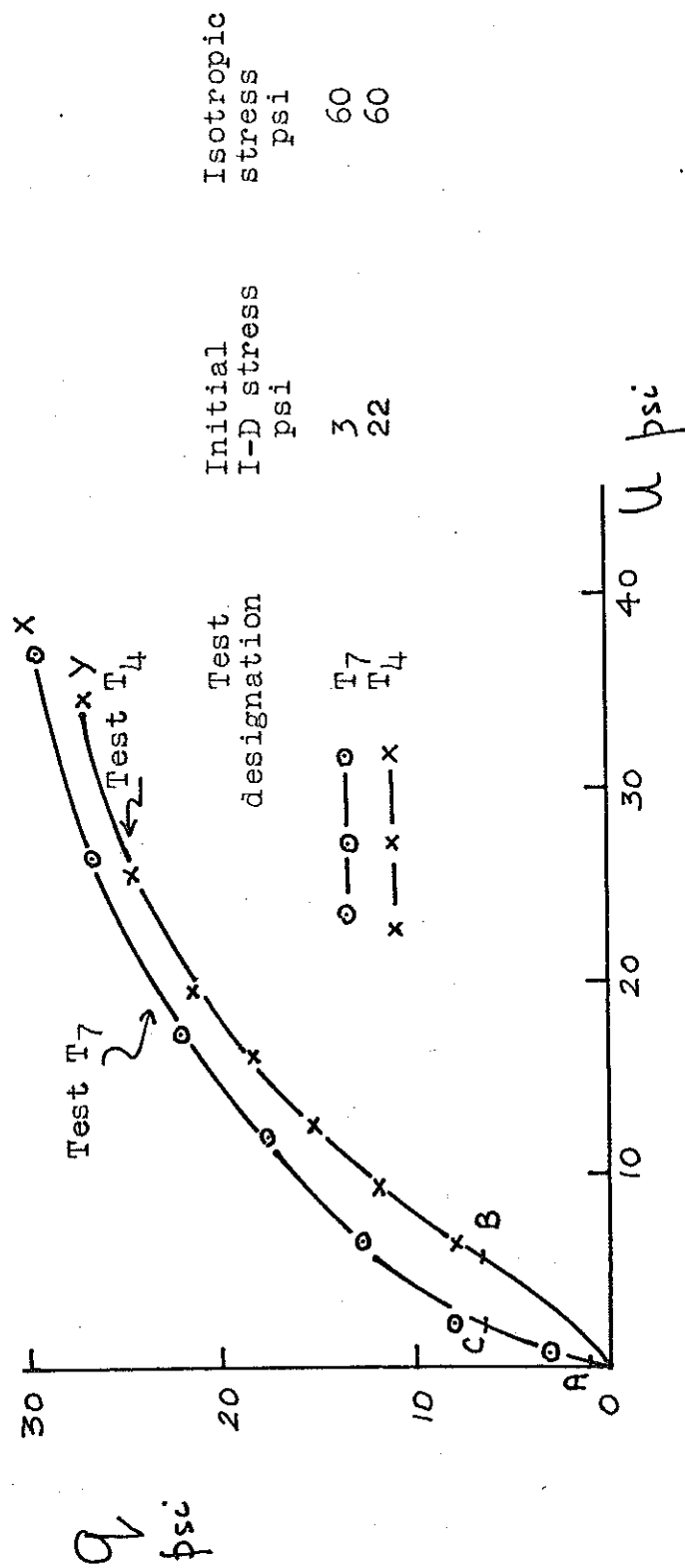


Fig. 4.20. The (q,u) characteristics of specimens prepared under different initial I-D stresses and sheared under fully drained condition from an isotropic stress of 60 psi with constant cell pressure.

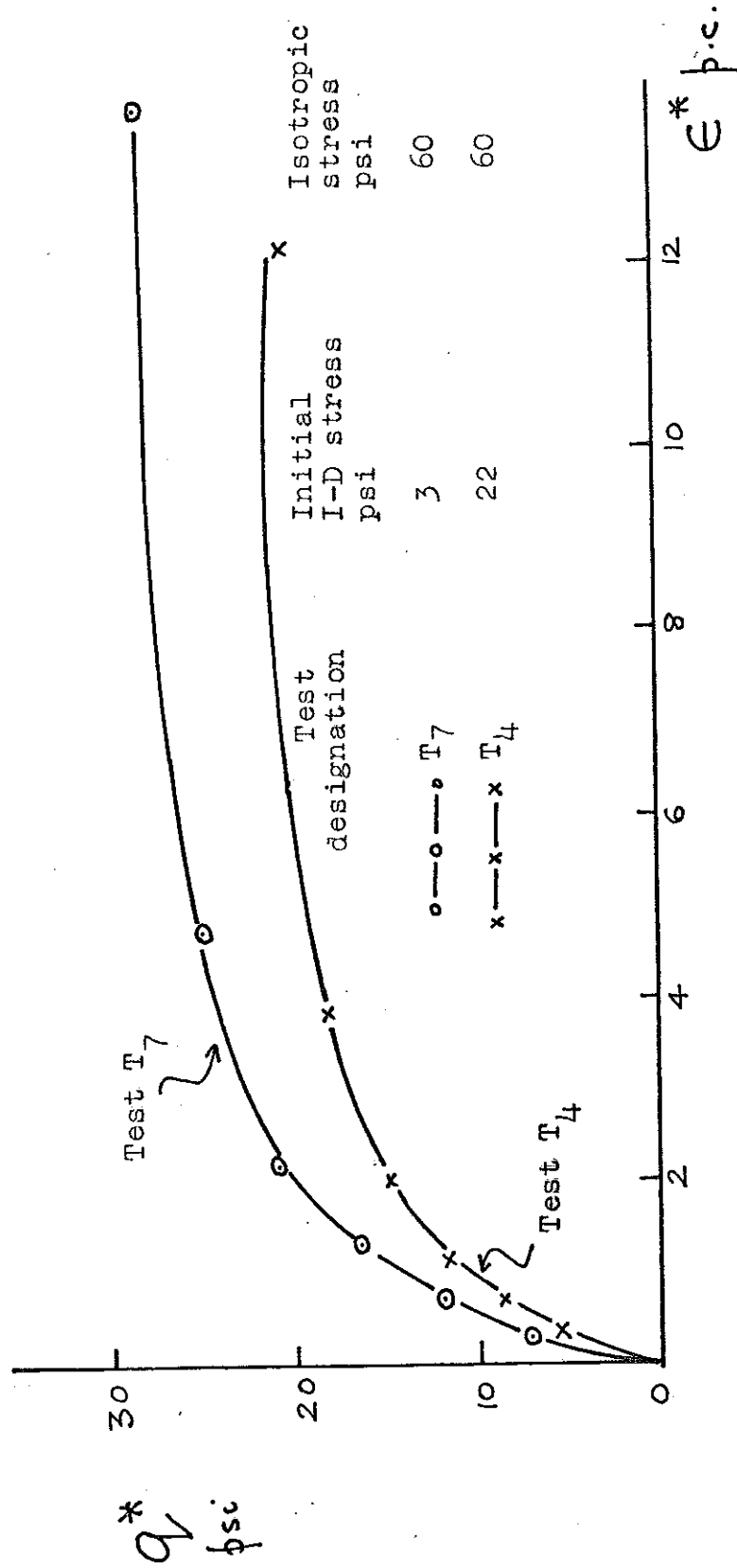


Fig. 4.21 The (q^*, e^*) relations of the specimens T_7 and T_4 prepared under different initial I-D stresses and sheared under undrained condition from an isotropic stress of 60 psi with constant cell pressure.

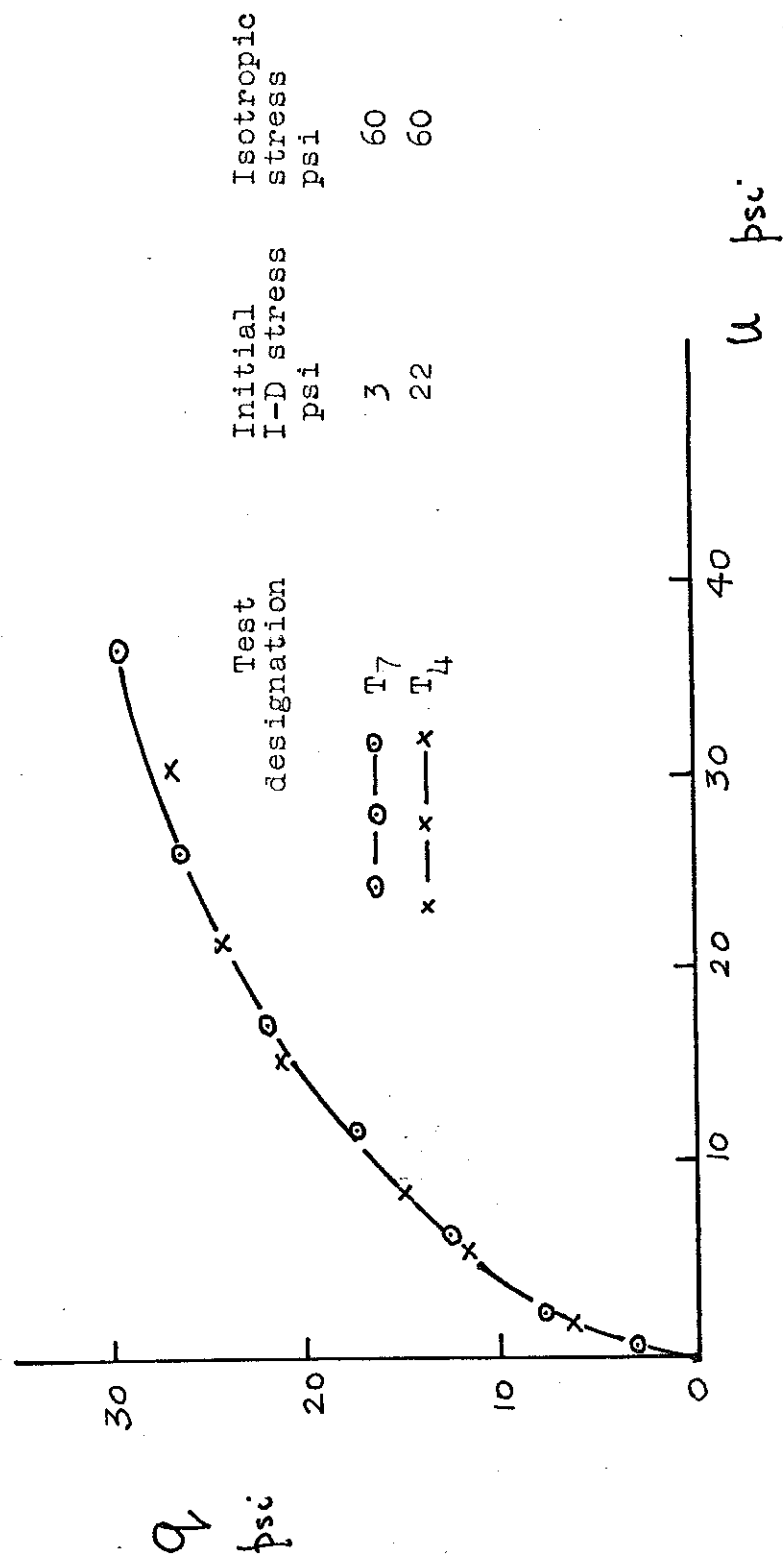


Fig. 4.23. The (q,u) characteristic for specimen T_7 and the modified (q,u) characteristic for specimen T_4 .

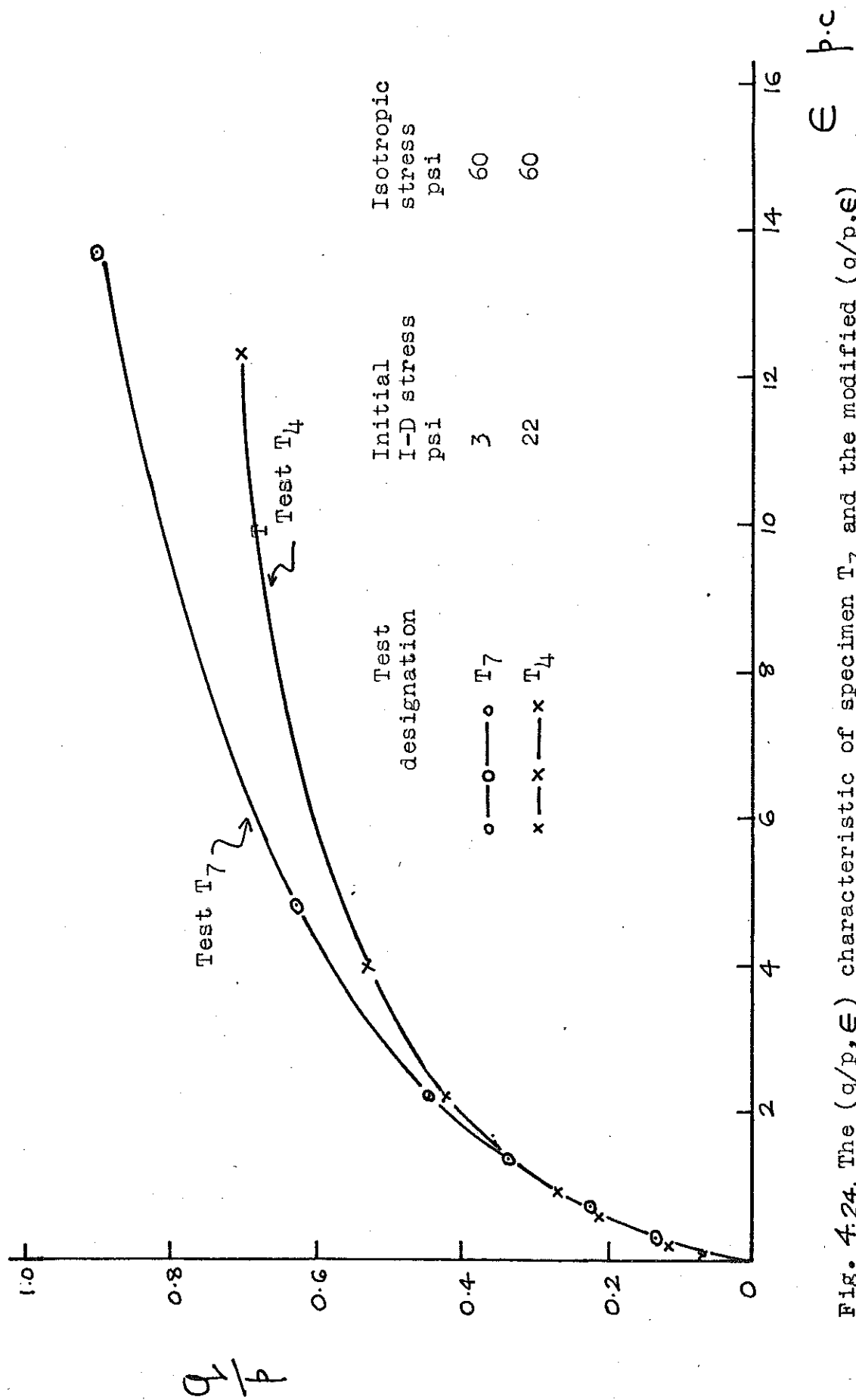


Fig. 4.24. The $(q/p, \epsilon)$ characteristic of specimen T_7 and the modified $(q/p, \epsilon)$ characteristic of specimen T_4 .

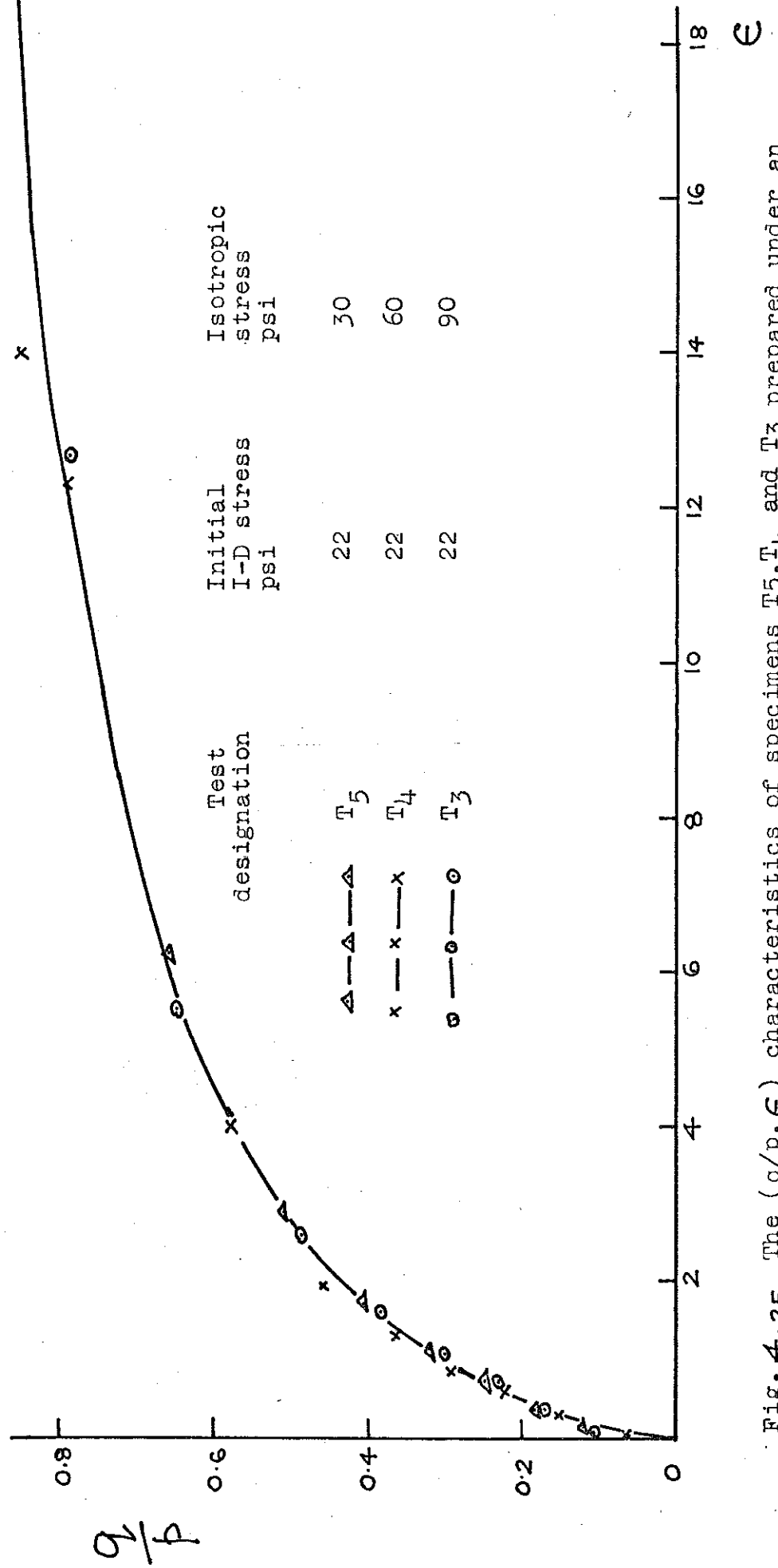


Fig. 4.25. The $(q/p, \epsilon)$ characteristics of specimens T₅, T₄ and T₃ prepared under an initial I-D stress of 22 psi and sheared under undrained condition from isotropic stresses of 30, 60 and 90 psi respectively.

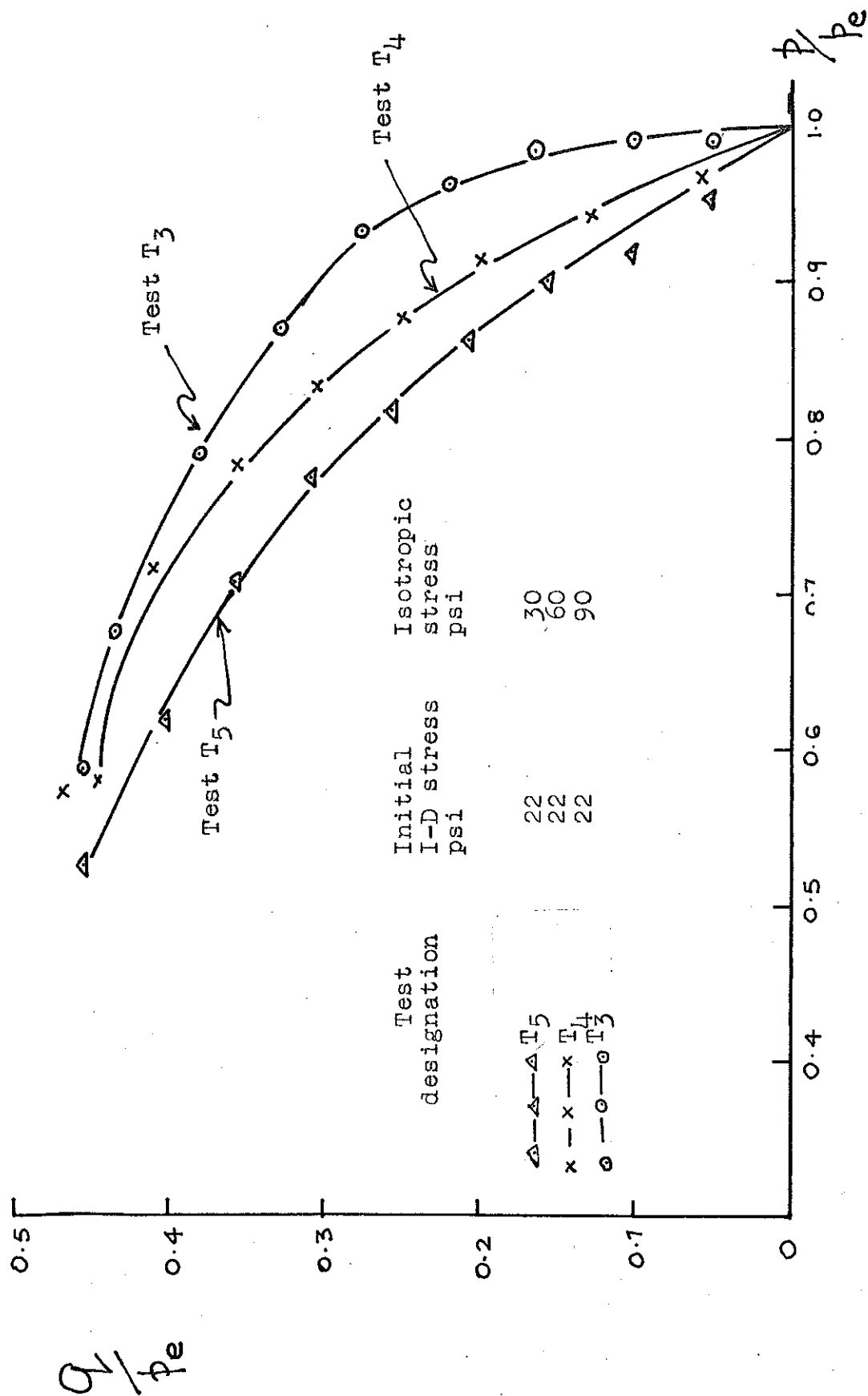


Fig. 4.26. The (q/p_e , p/p_e) characteristics of specimens T_5 , T_4 and T_3 prepared under an initial I-D stress of 22 psi and sheared under undrained condition from isotropic stresses of 90, 60 and 30 psi respectively.

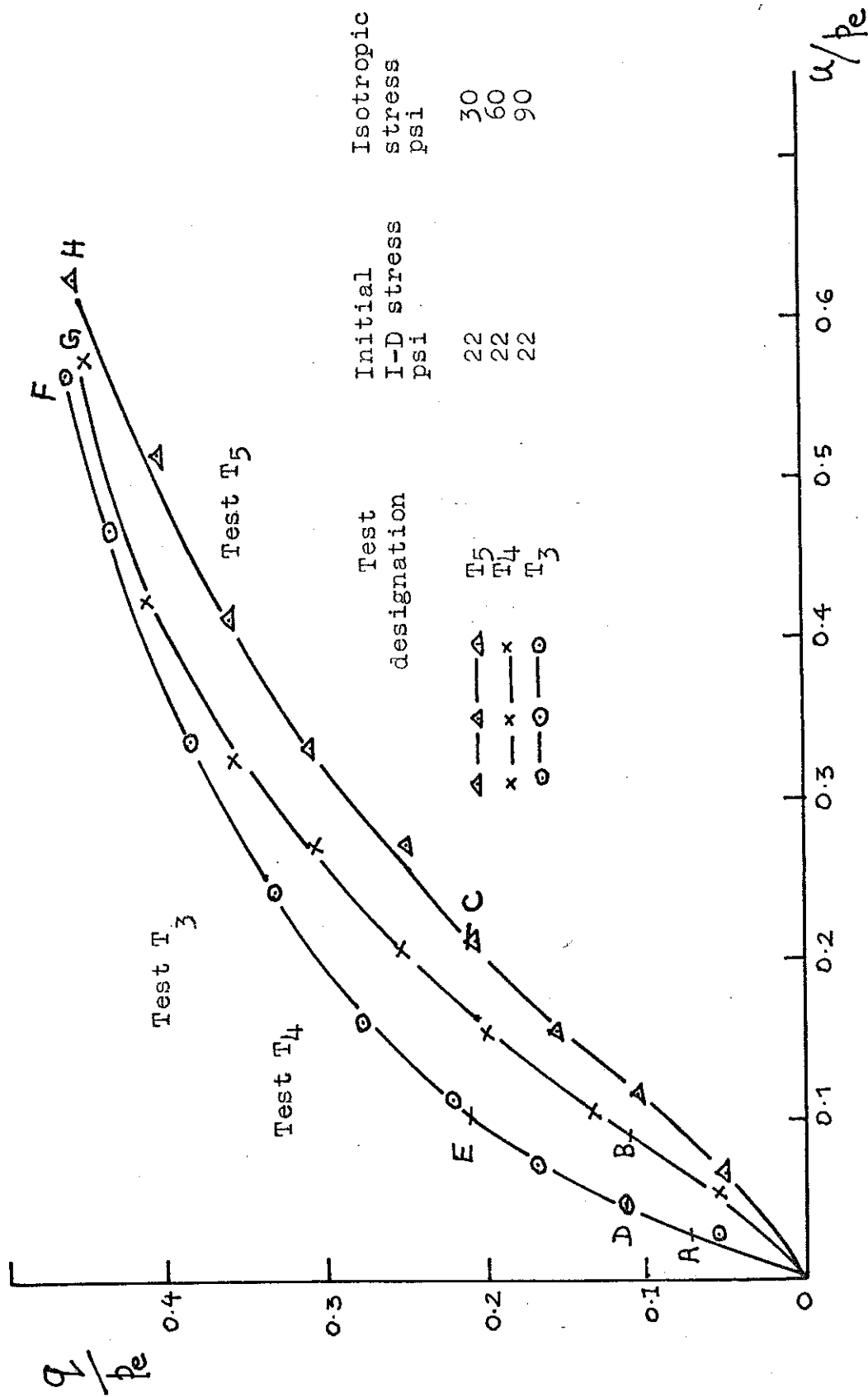


Fig. 4.27. The $(q/p_e, u/p_e)$ relations of specimens T5, T4 and T3 prepared under an initial I-D stress of 22 psi and sheared under undrained condition from isotropic stresses of 30, 60 and 90 psi respectively.

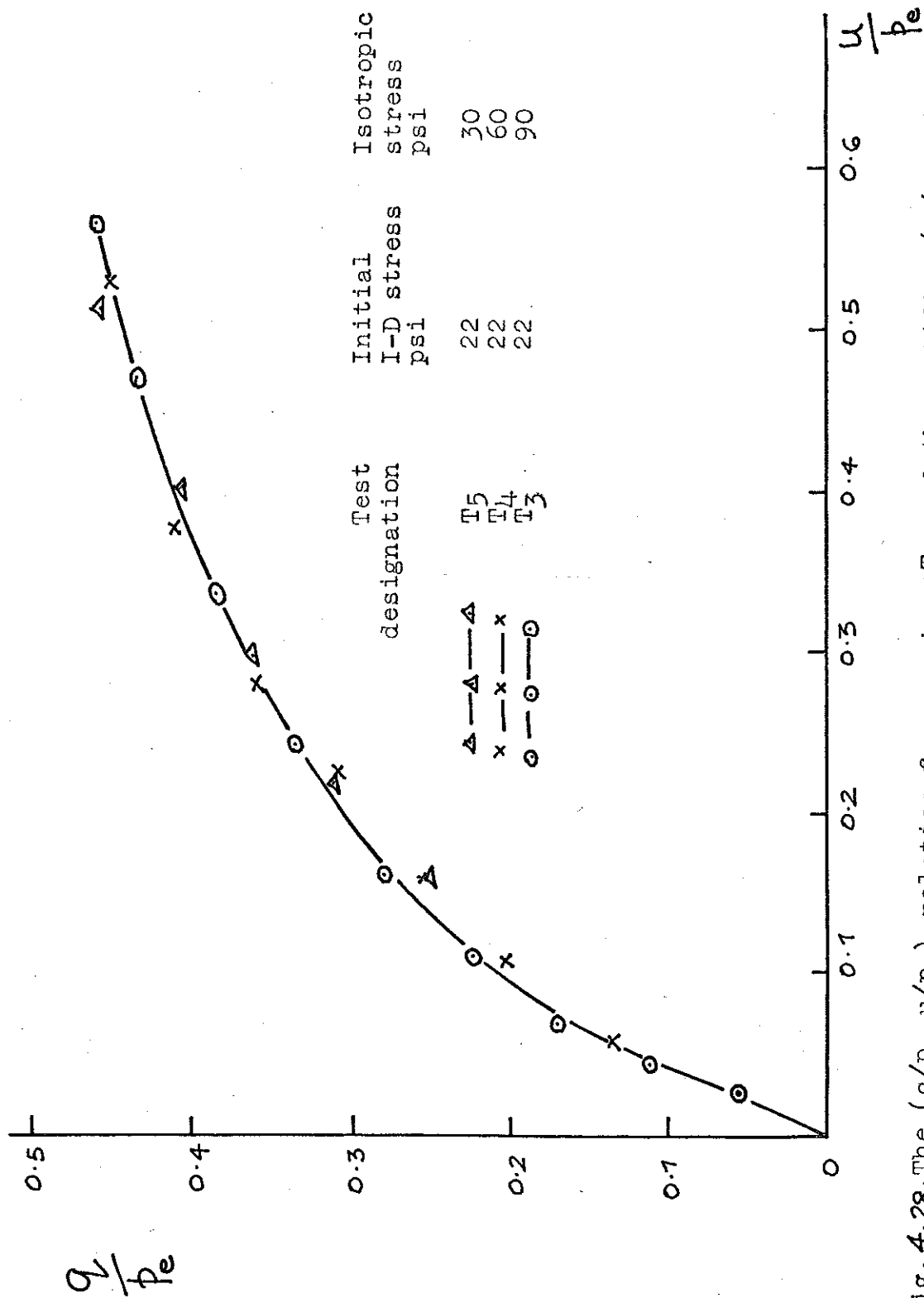


Fig. 4.28. The $(q/p_e, u/p_e)$ relation for specimen T3 and the modified $(q/p_e, u/p_e)$ relations of specimens T4 and T5

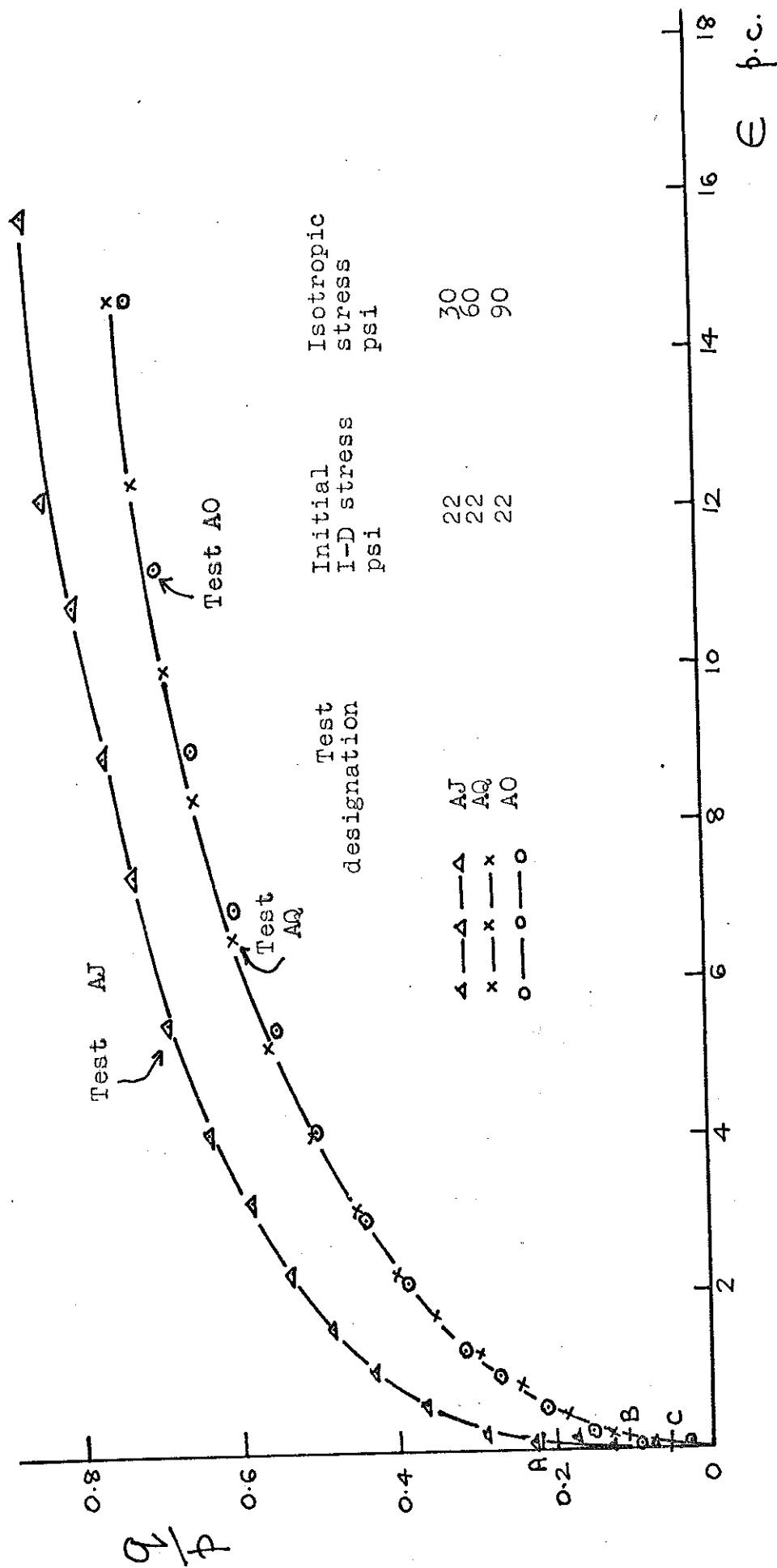


Fig. 4.29. The $(q/p, \epsilon)$ characteristics of specimens AJ, AQ and AO prepared under an initial I-D stress of 22 psi and sheared under constant p condition from isotropic stresses of 30, 60 and 90 psi respectively.

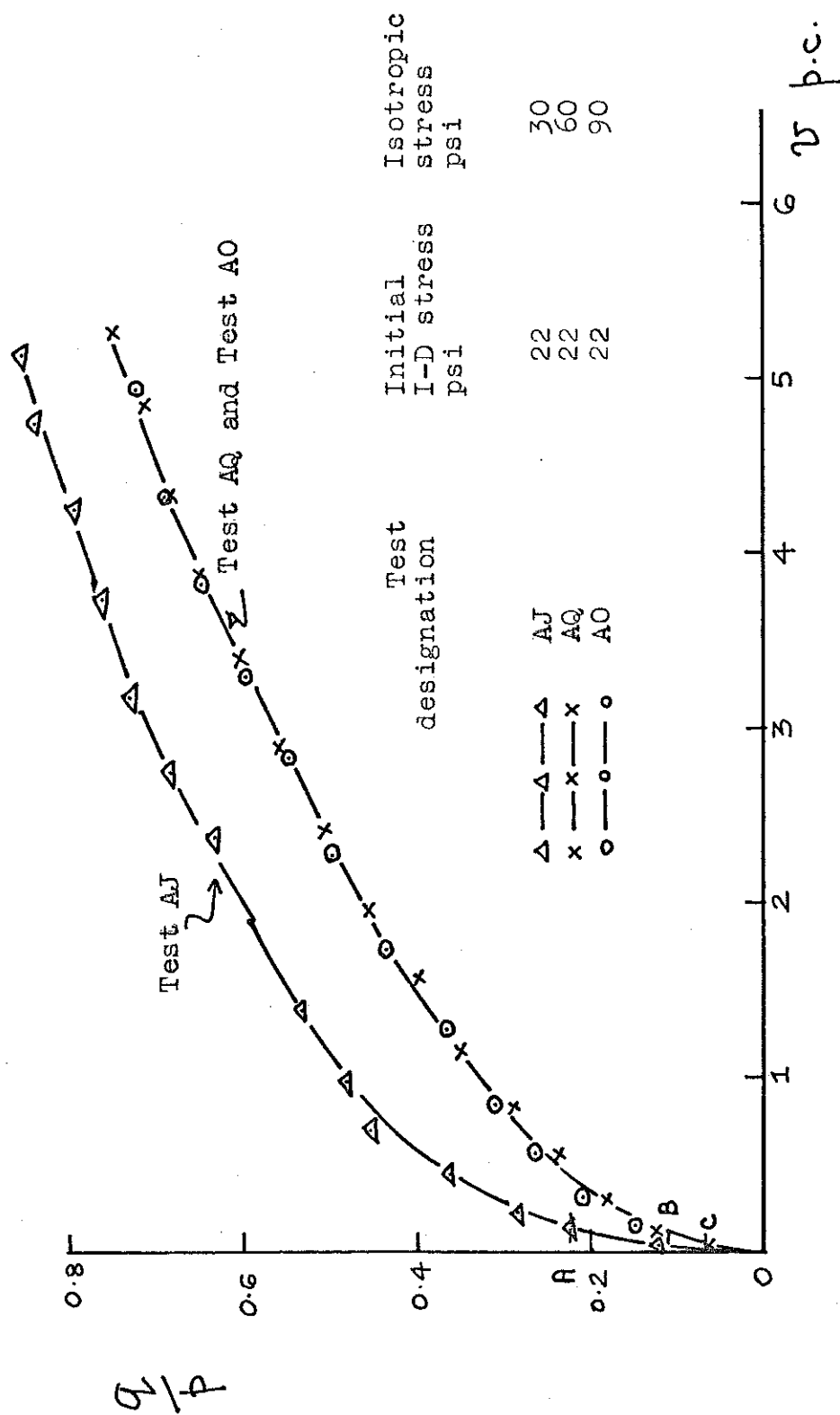


Fig. 4.30. The $(q/p, v)$ characteristics of specimens AJ, AQ and AO prepared under an initial I-D stress of 22 psi and sheared under const. p condition from isotropic stresses of 30, 60 and 90 psi respectively.

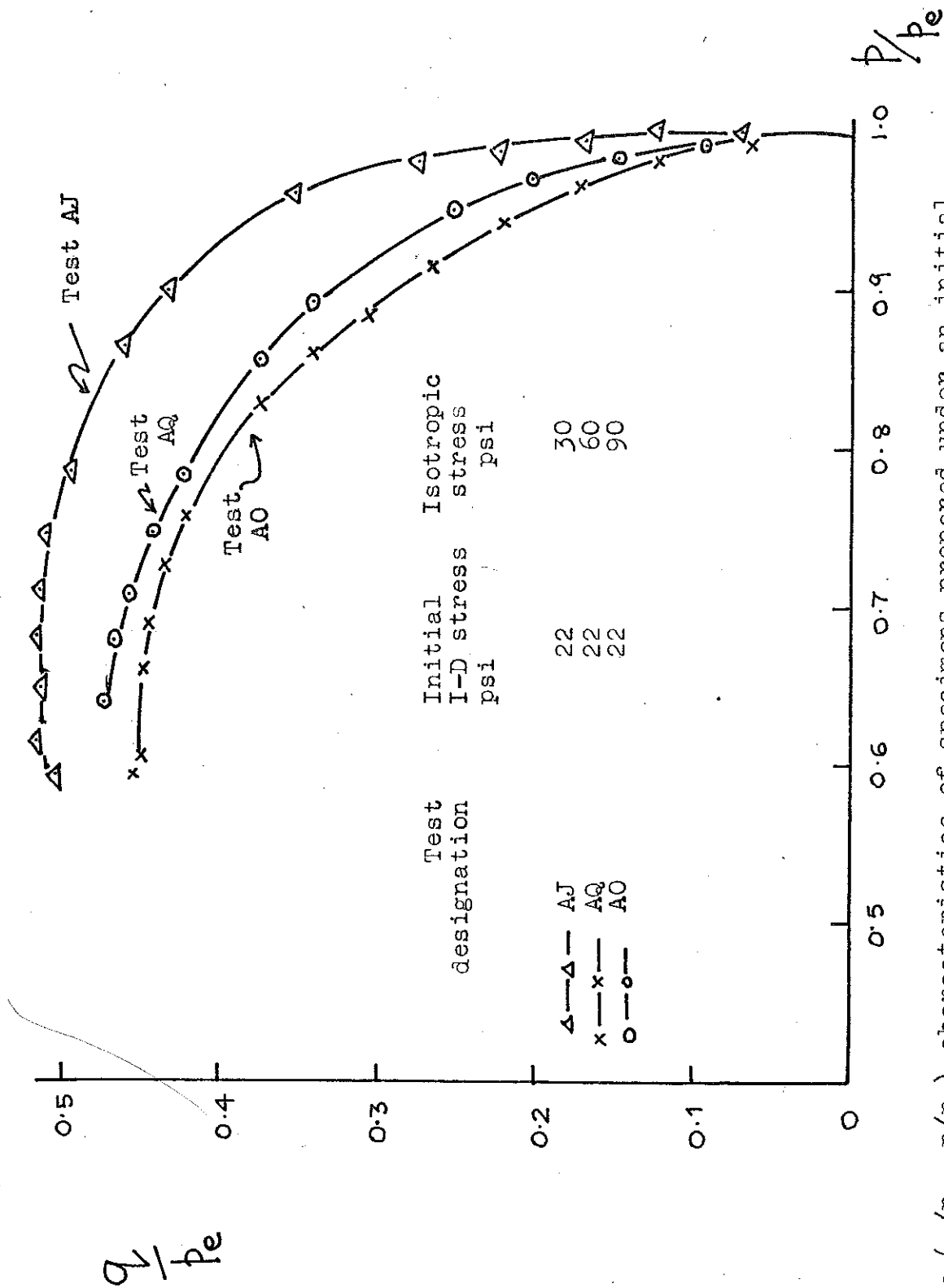


Fig. 4.31 The (q/p_e , p/p_e) characteristics of specimens prepared under an initial I-D stress of 22 psi and sheared under constant p condition from isotropic stresses of 30, 60 and 90 psi.

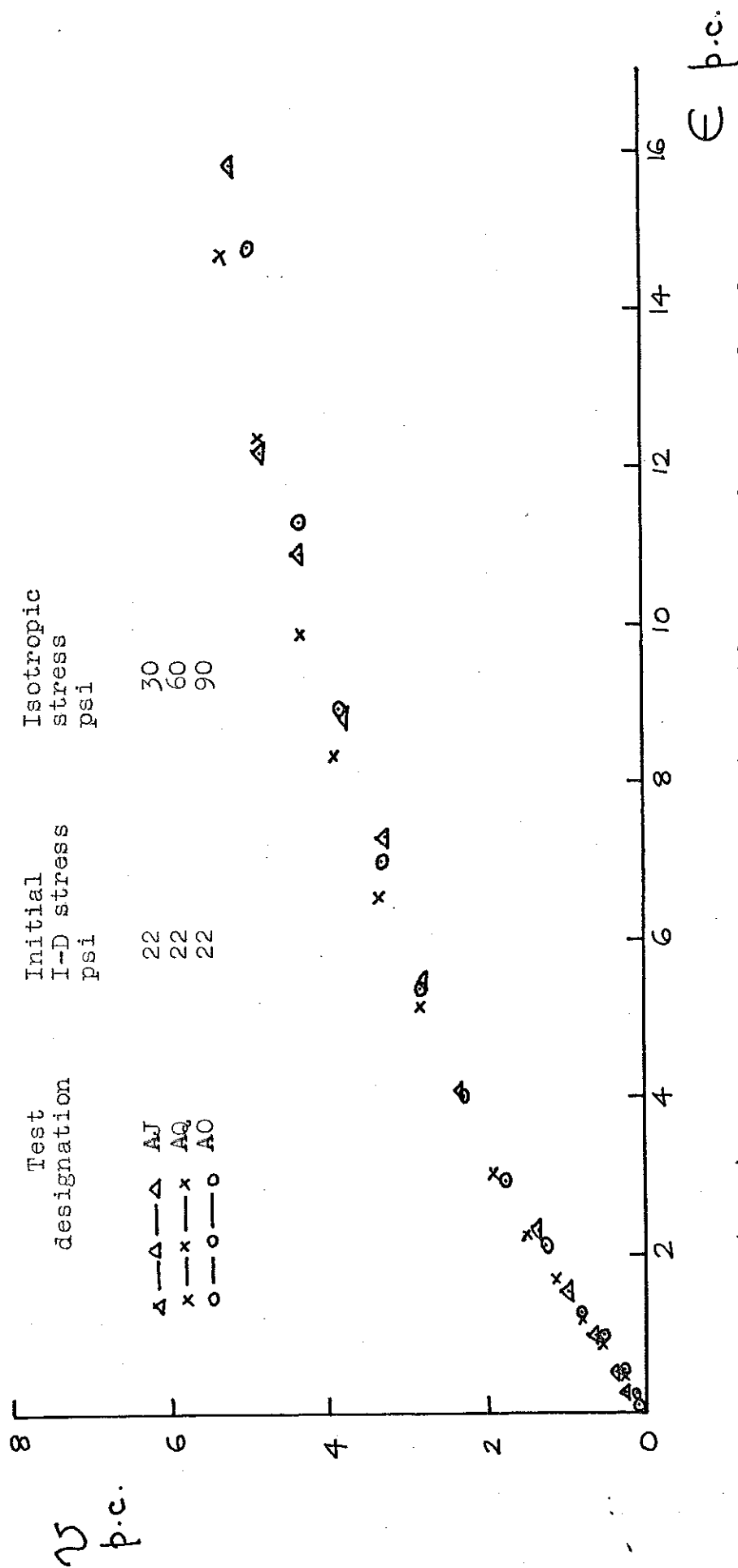


Fig. 4.32. The (ν, ϵ) characteristics of specimens AJ, AQ and AO prepared under an initial I-D stress of 22 psi and sheared under constant p condition from isotropic stresses of 30, 60 and 90 psi respectively.

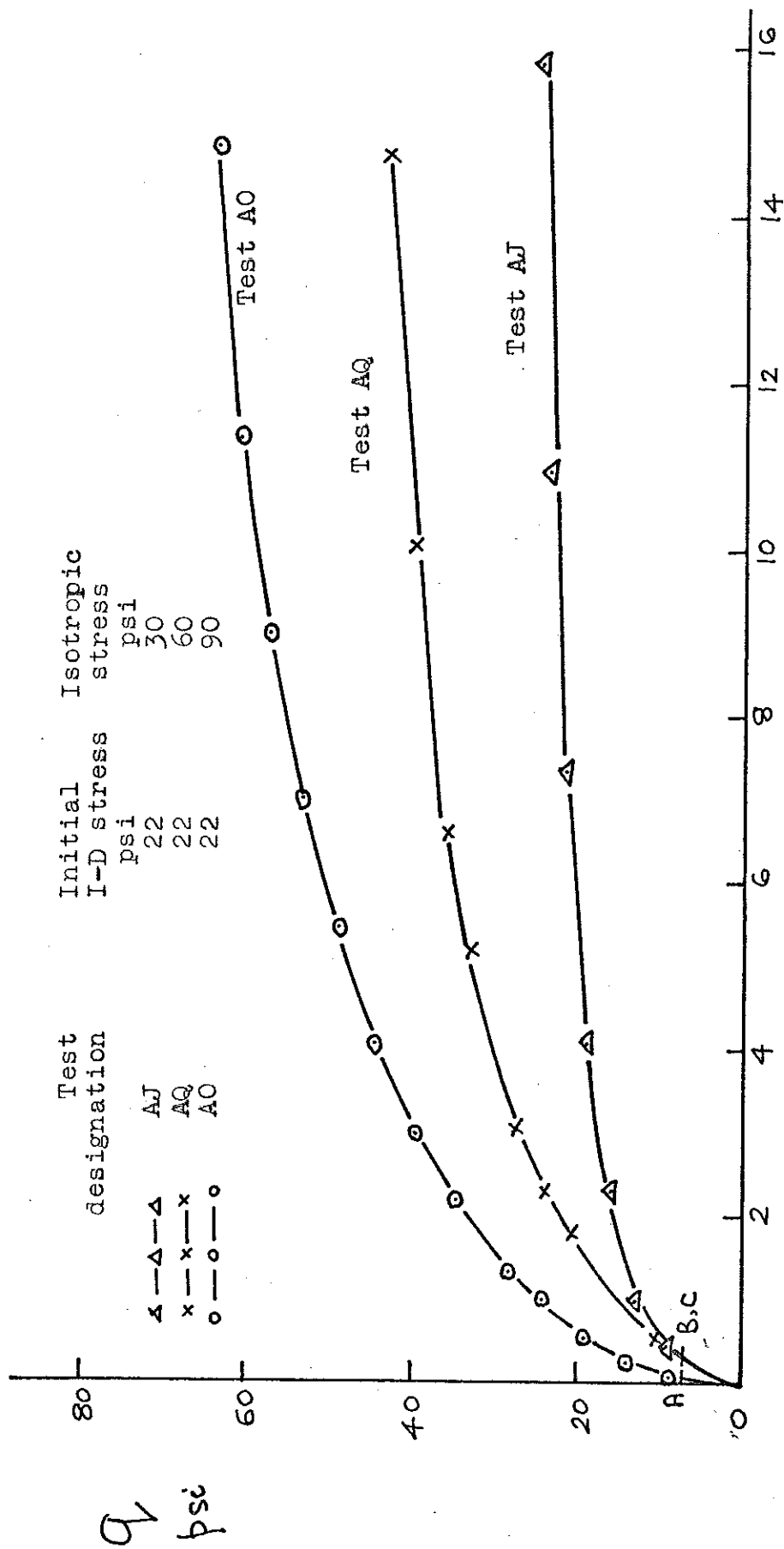


Fig. 4.33. The (q, ϵ) characteristics of specimens AJ, AQ and AO prepared under initial I-D stress of 22 psi and sheared under constant p condition from isotropic stresses of 30, 60 and 90 psi respectively.

Test designation	Initial I-D stress psi	Isotropic stress psi
△ — △ — △ AJ	22	30
× — × — × AQ	22	60
○ — ○ — ○ AO	22	90

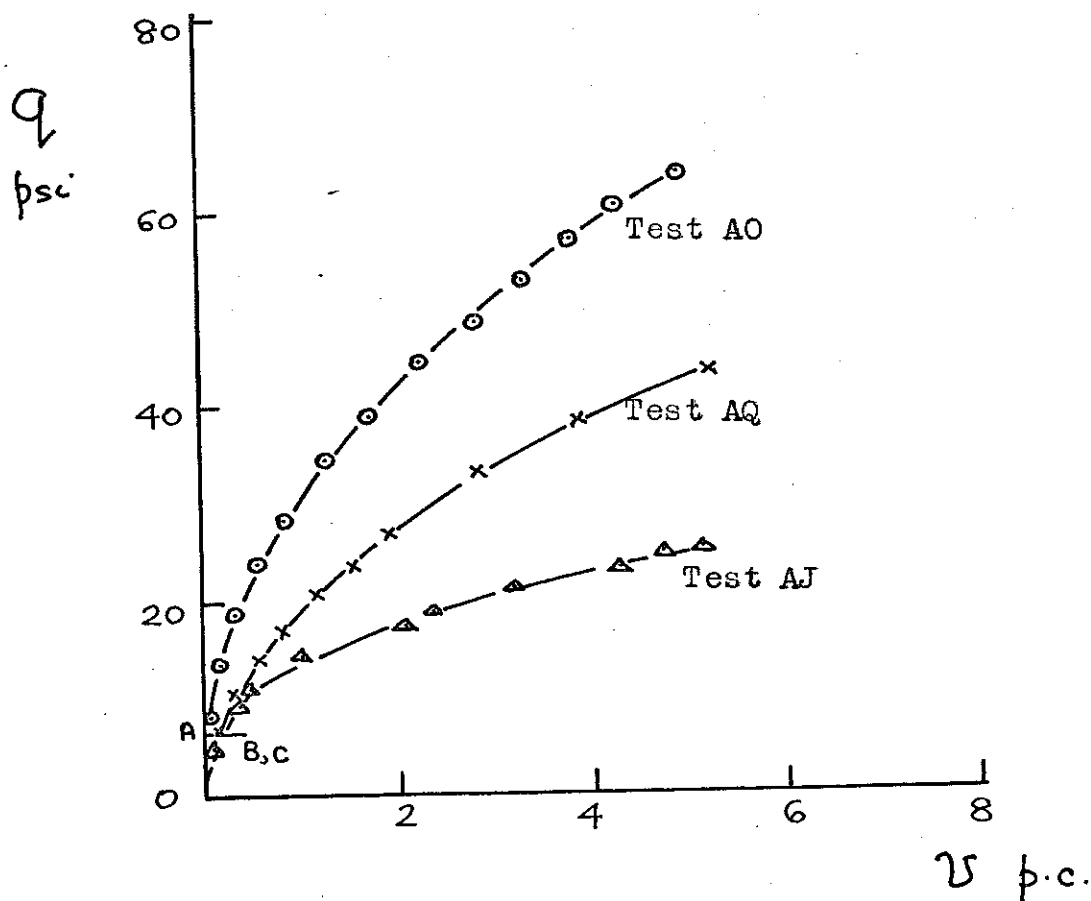


Fig. 4.34 The (q , v) characteristics of specimens prepared under initial I-D stress of 22 psi and sheared under constant p condition from isotropic stresses of 30, 60 and 90 psi.

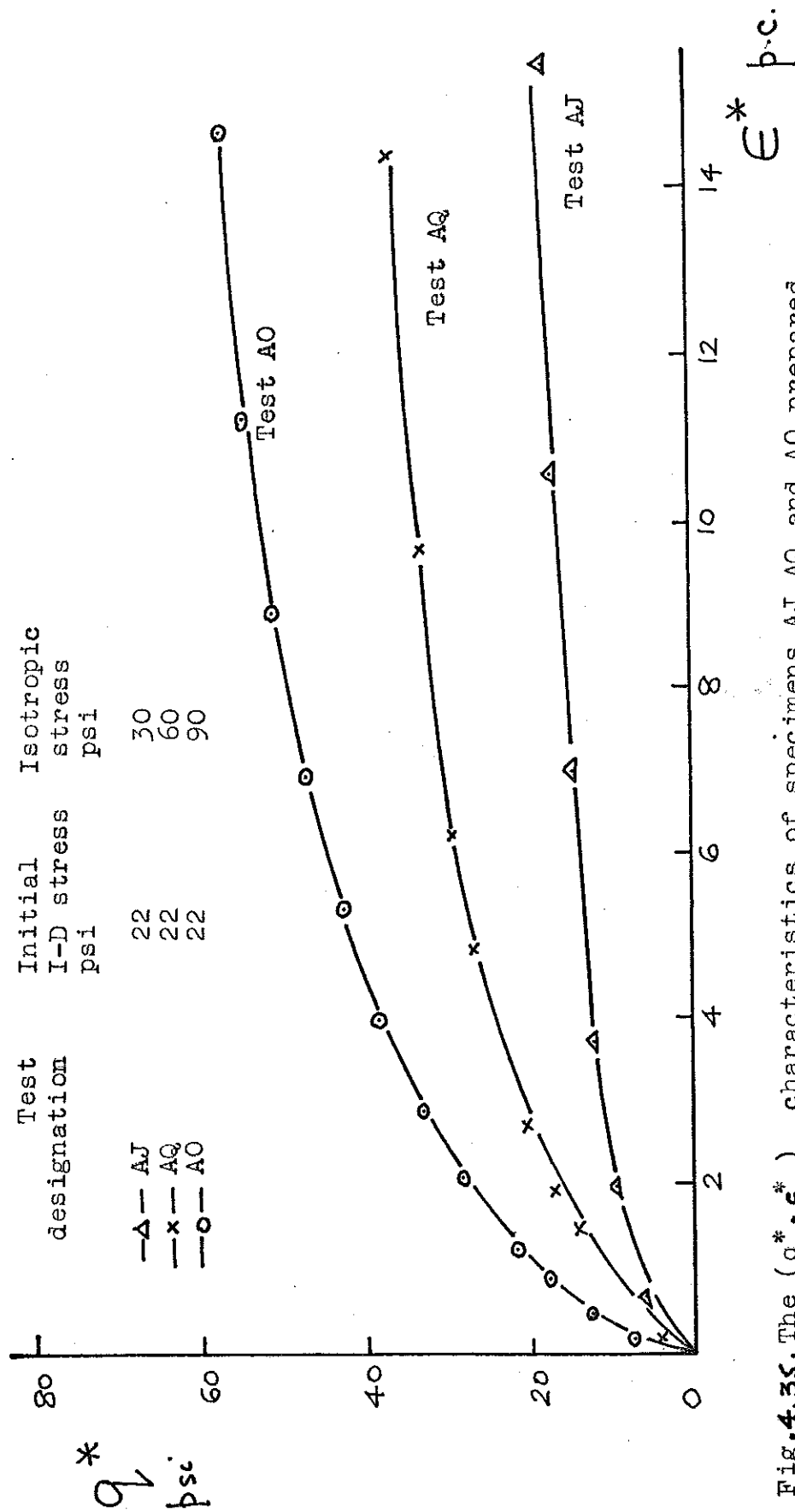


Fig. 4.35. The (q^*, ϵ^*) characteristics of specimens AJ, AQ and AO prepared under an initial I-D stress of 22 psi and sheared under constant p condition from isotropic stresses of 30, 60 and 90 psi respectively.

Test designation	Initial I-D stress psi	Isotropic stress psi
-△-△-△ AJ	22	30
x-x-x AQ	22	60
o-o-o AO	22	90

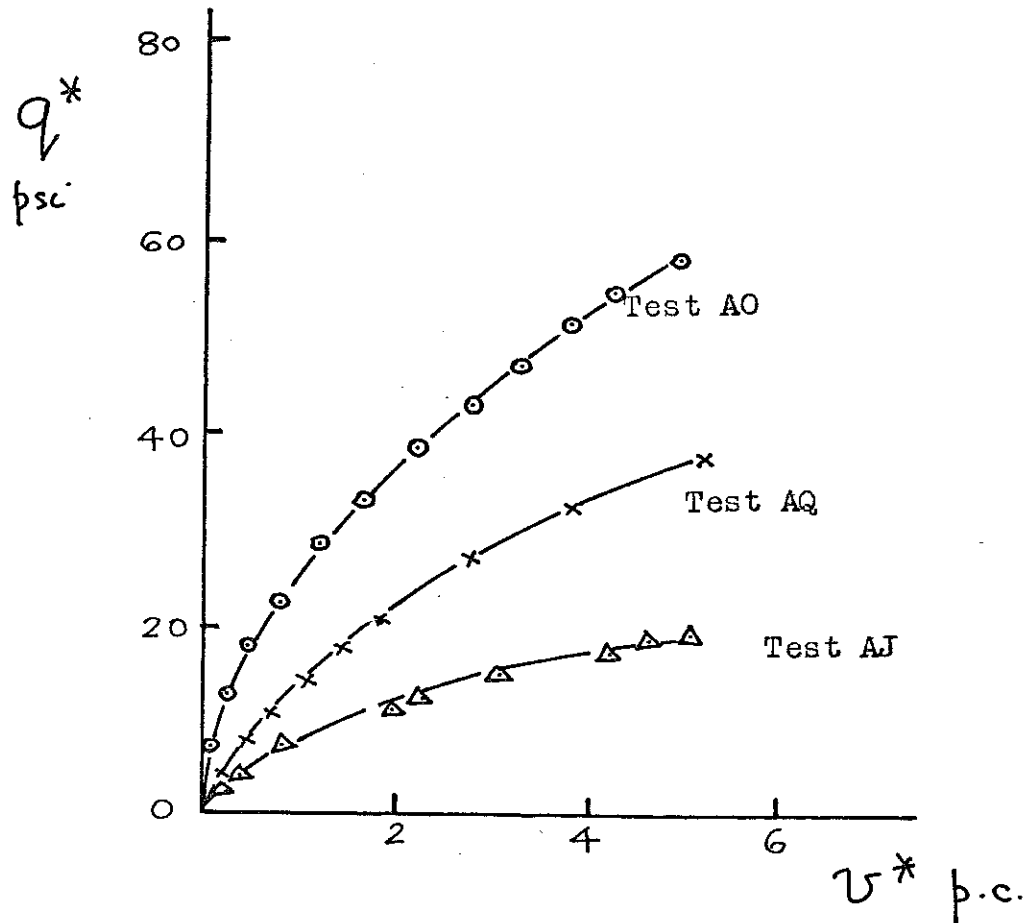


Fig.4.36. The (q^*, v^*) characteristics of specimens AJ, AQ and AO prepared under initial I-D stress of 22 psi and sheared under constant p condition from isotropic stresses of 30, 60 and 90 psi respectively.

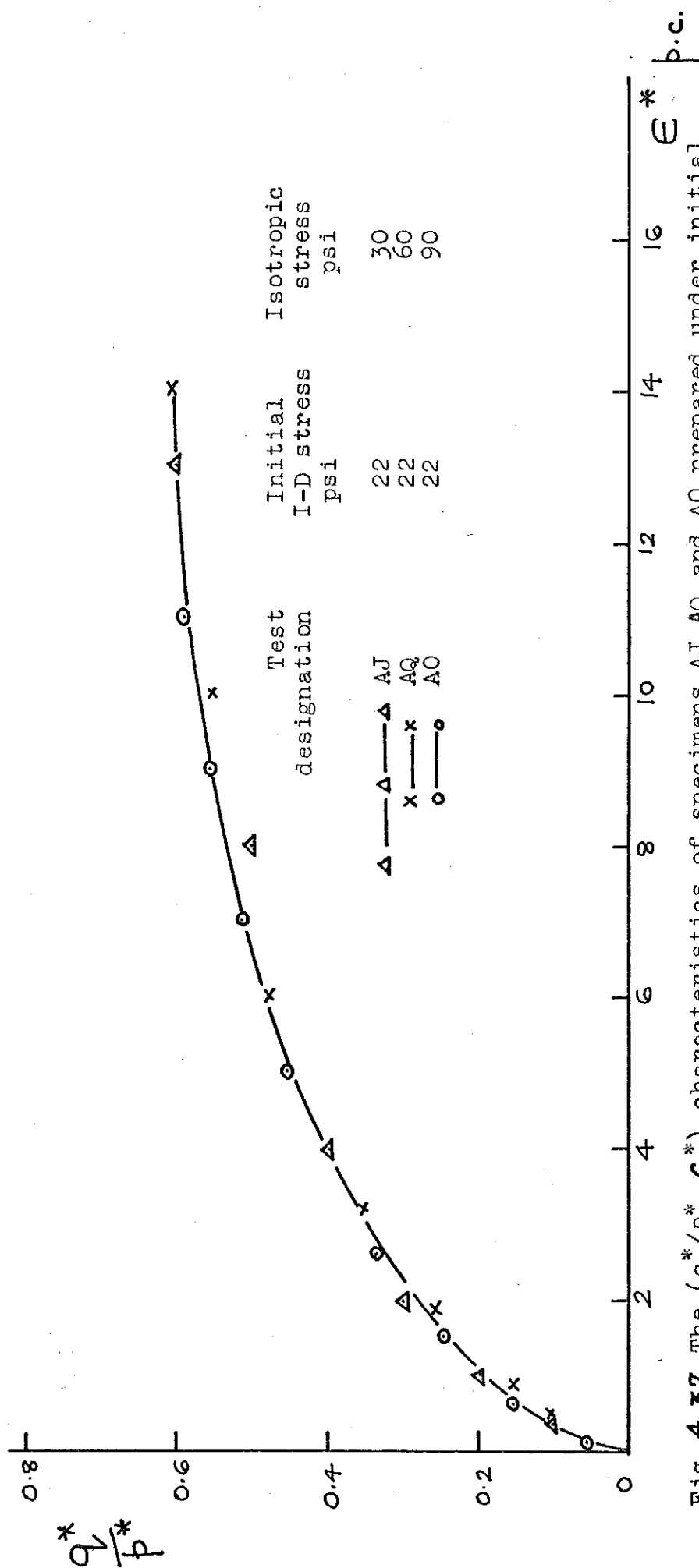


Fig. 4.37. The $(q^*/p^*, \epsilon^*)$ characteristics of specimens AJ, AQ and AO prepared under initial I-D stress of 22 psi and sheared under constant p condition from isotropic stresses of 30, 60 and 90 psi respectively.

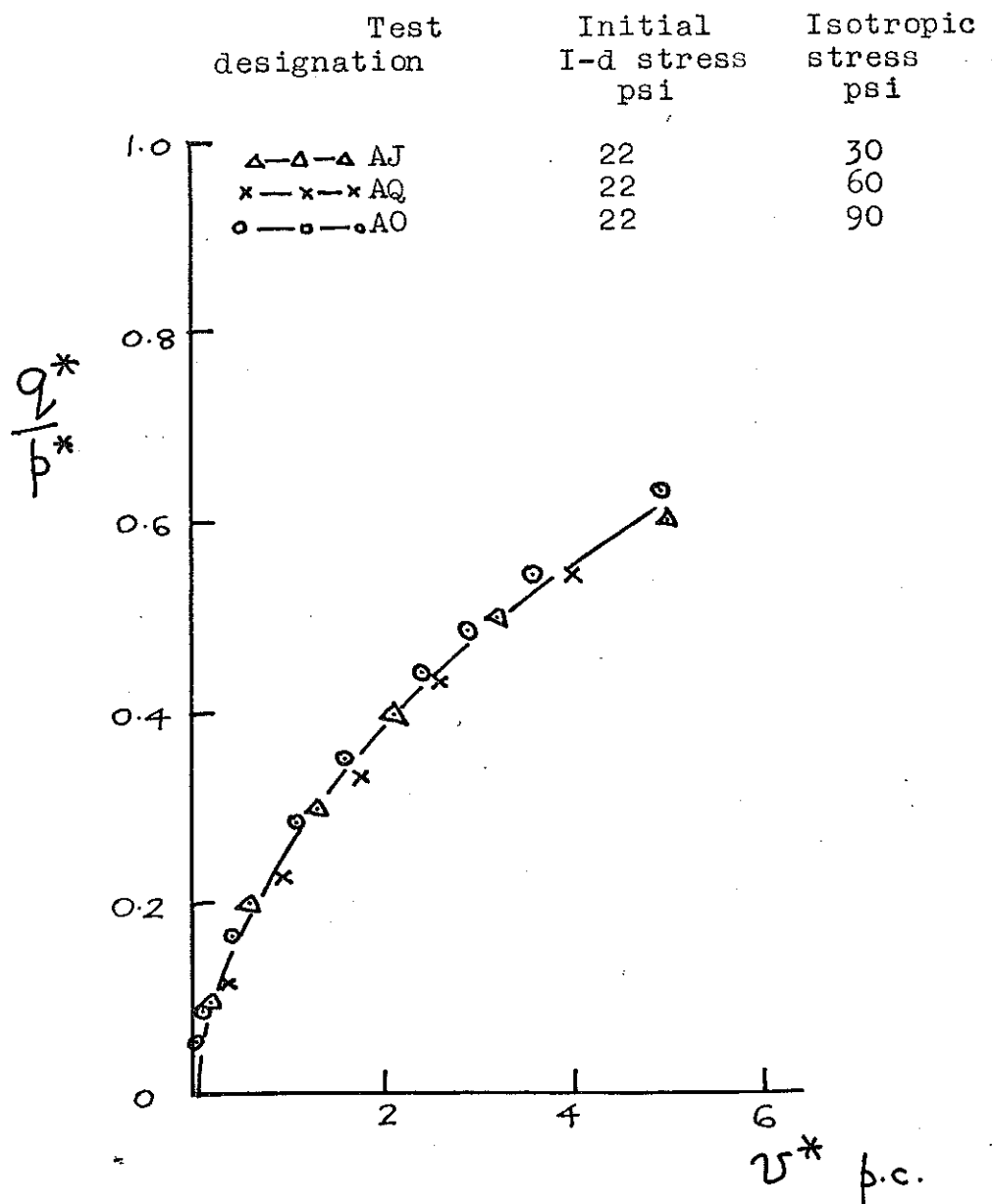


Fig.4.38. The $(\frac{q^*}{p^*}, v^*)$ characteristics of specimens AJ, AQ and AO prepared under initial I-D stress of 22 psi and sheared under constant p condition from isotropic stresses of 30, 60 and 90 psi respectively.

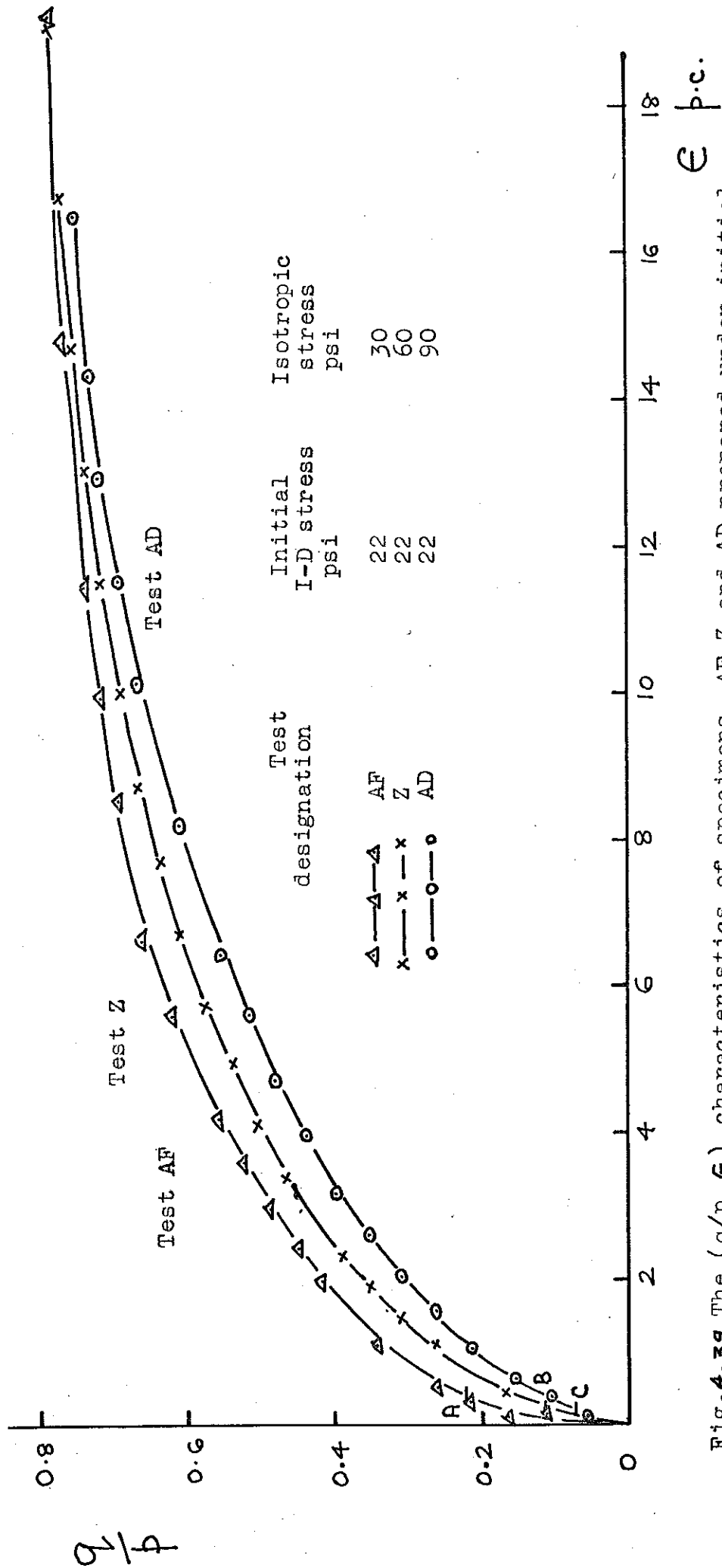


Fig. 4.39. The ($q/p, e$) characteristics of specimens AF, Z and AD prepared under initial I-D stress of 22 psi and sheared under fully drained condition from isotropic stresses of 30, 60 and 90 psi respectively.

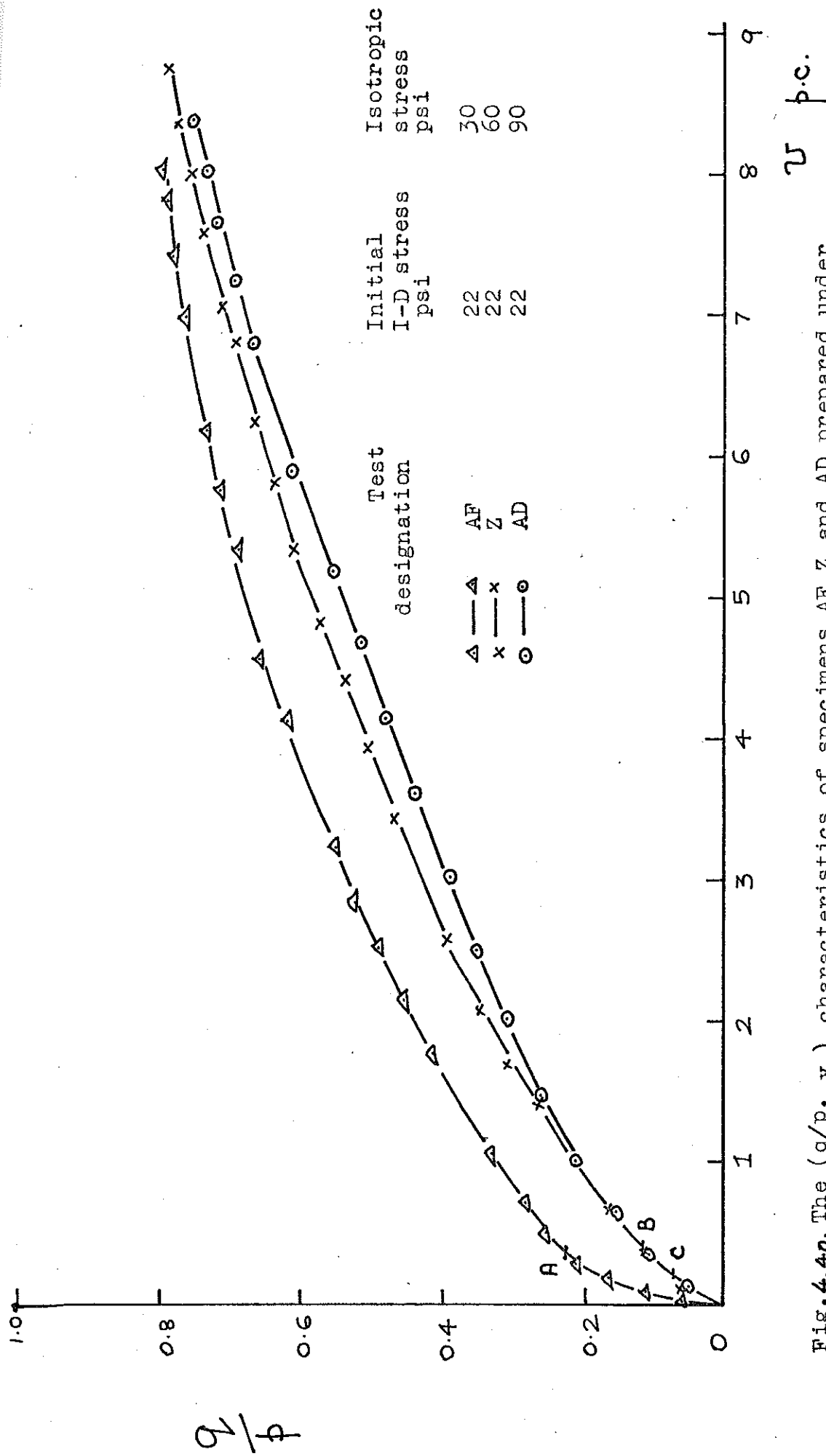


Fig. 4.40. The $(q/p, v)$ characteristics of specimens AF, Z and AD prepared under initial I-D stress of 22 psi and sheared under fully drained condition with applied stress path of slope 3 from isotropic stresses of 30, 60 and 90 psi respectively.

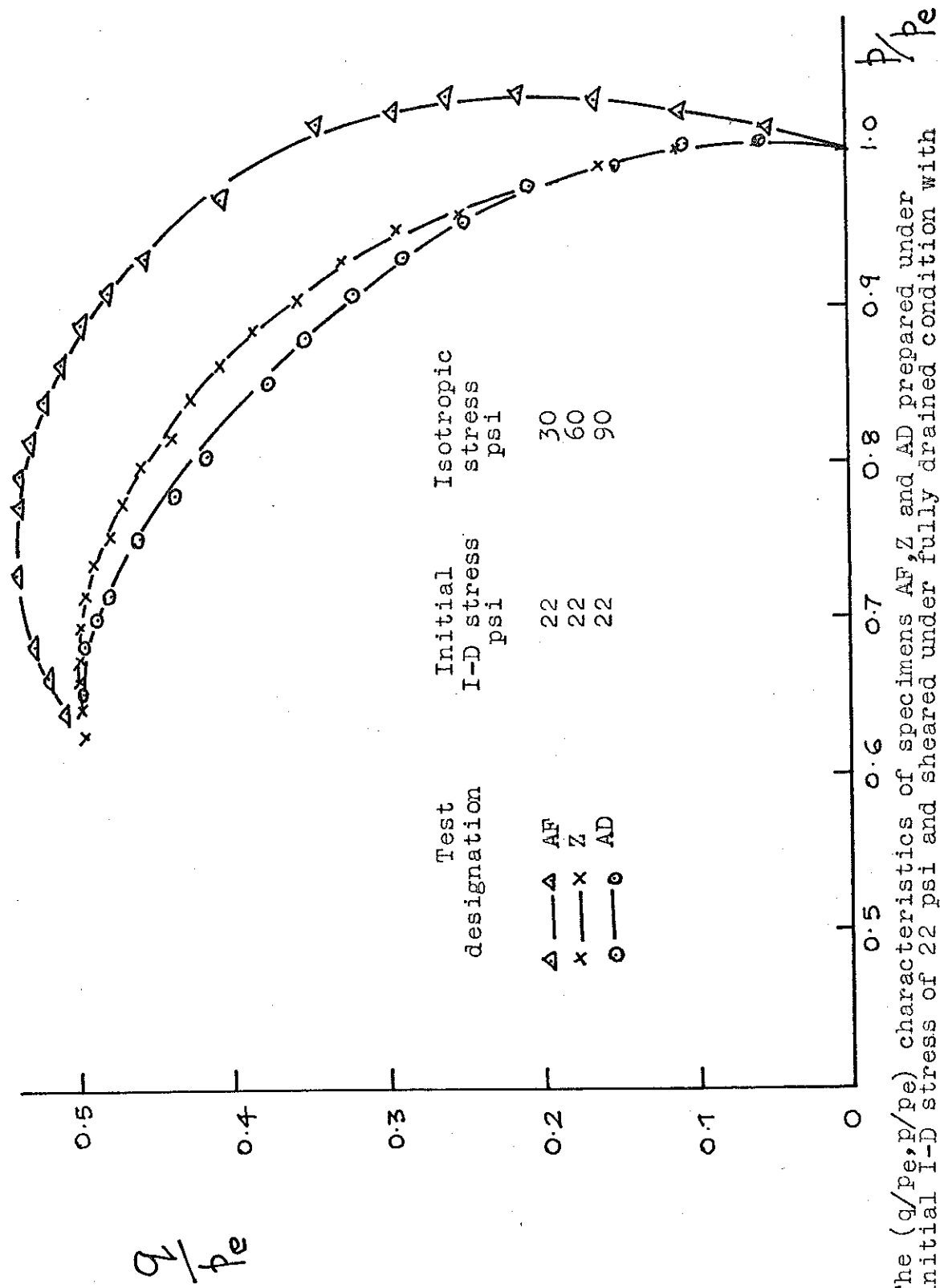


Fig. 4.41.

The $(q/p_e, p/p_e)$ characteristics of specimens AF, Z and AD prepared under initial I-D stress of 22 psi and sheared under fully drained condition with an applied stress path of slope 3 from isotropic stresses of 30, 60 and 90 psi respectively.

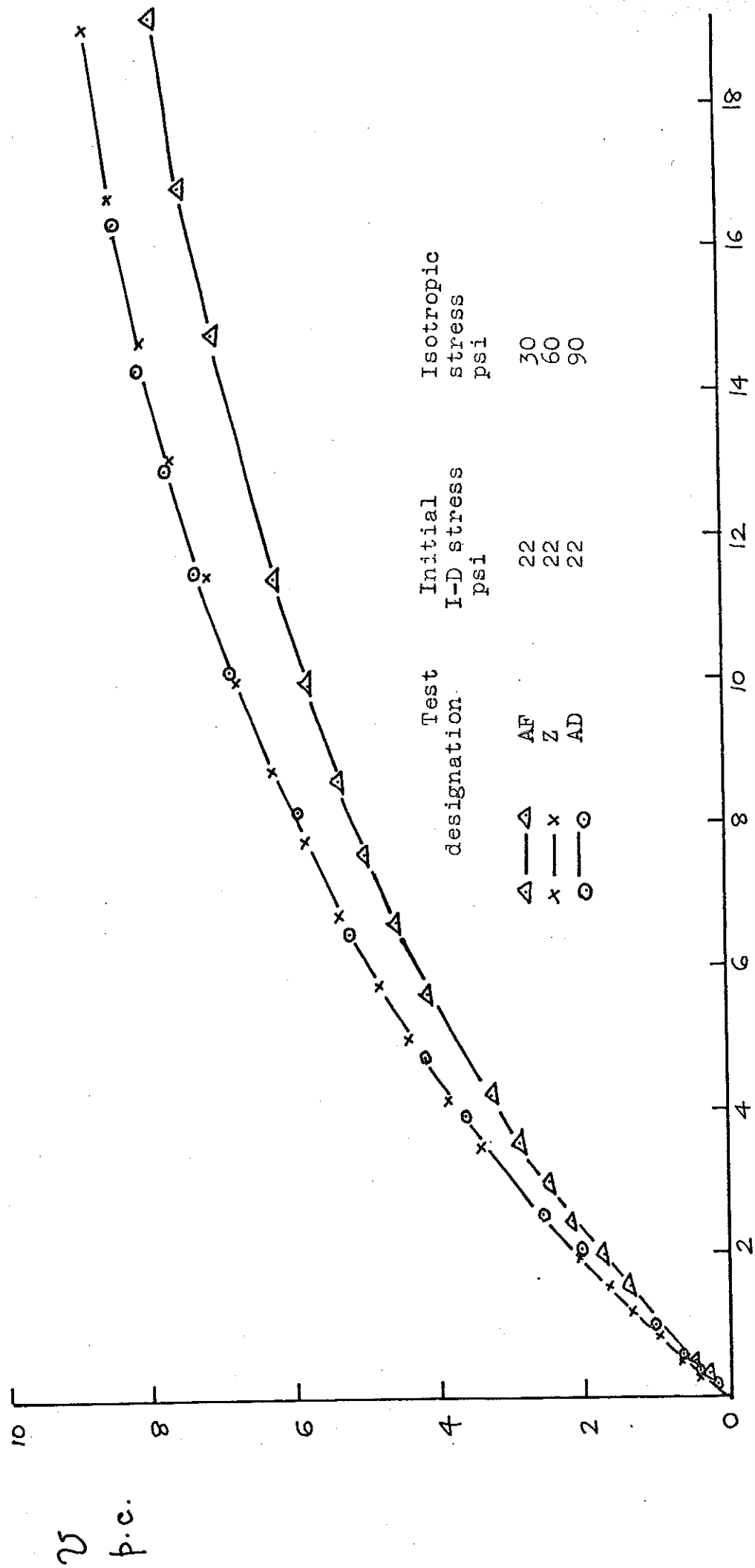


Fig. 4.4.2 The (v, ϵ) characteristics of specimens AF, Z and AD prepared under initial I-D Stress of 22 psi and sheared under fully drained condition with an applied stress path of slope 3 from isotropic stresses of 30, 60 and 90 psi respectively.

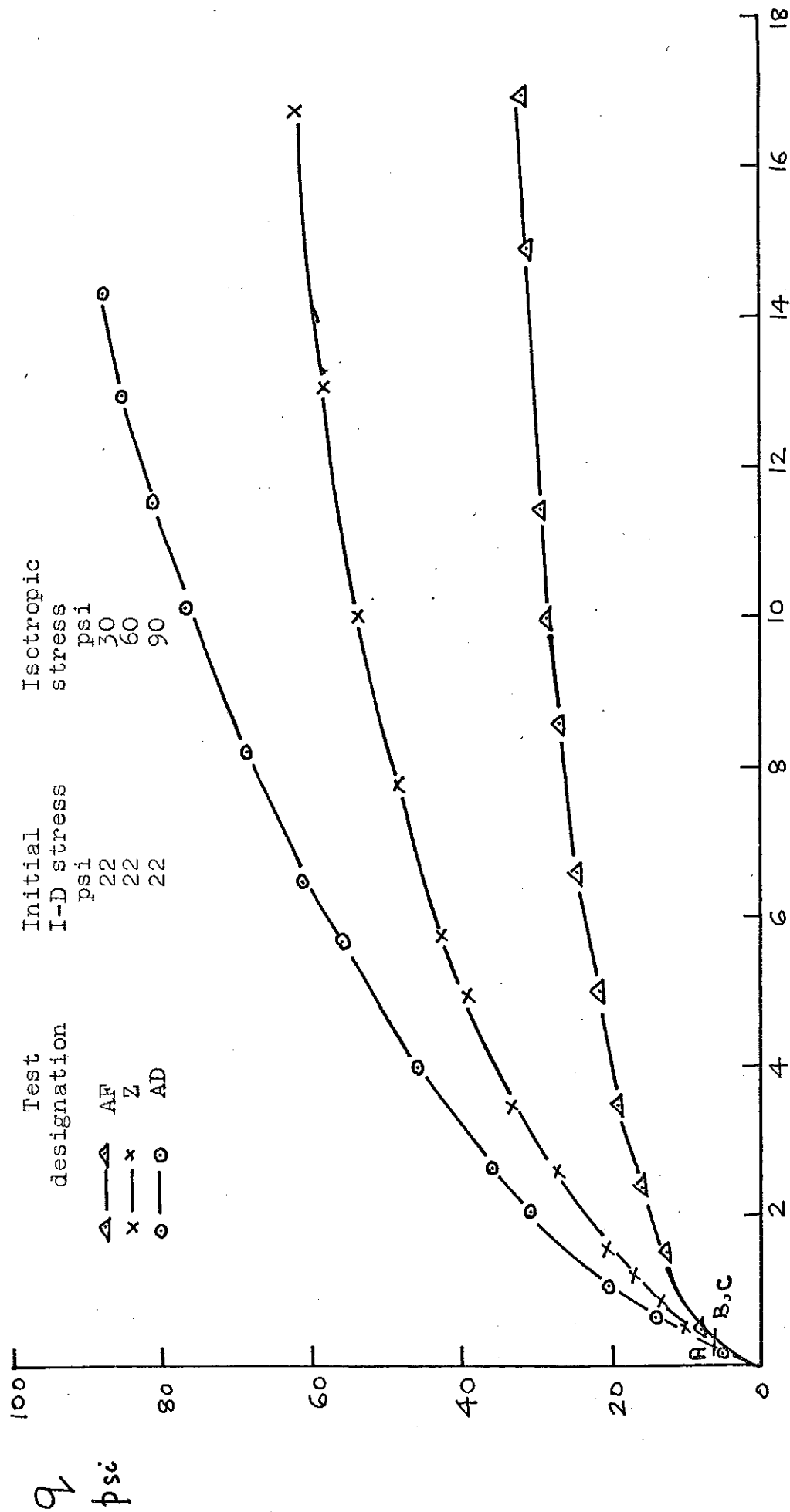


Fig. 4.43. The (q, E) characteristics of specimens AF, Z, and AD prepared under an initial I-D stress of 22 psi and sheared under fully drained condition with an applied stress path of slope 3 from isotropic stresses of 30, 60 and 90 psi respectively.

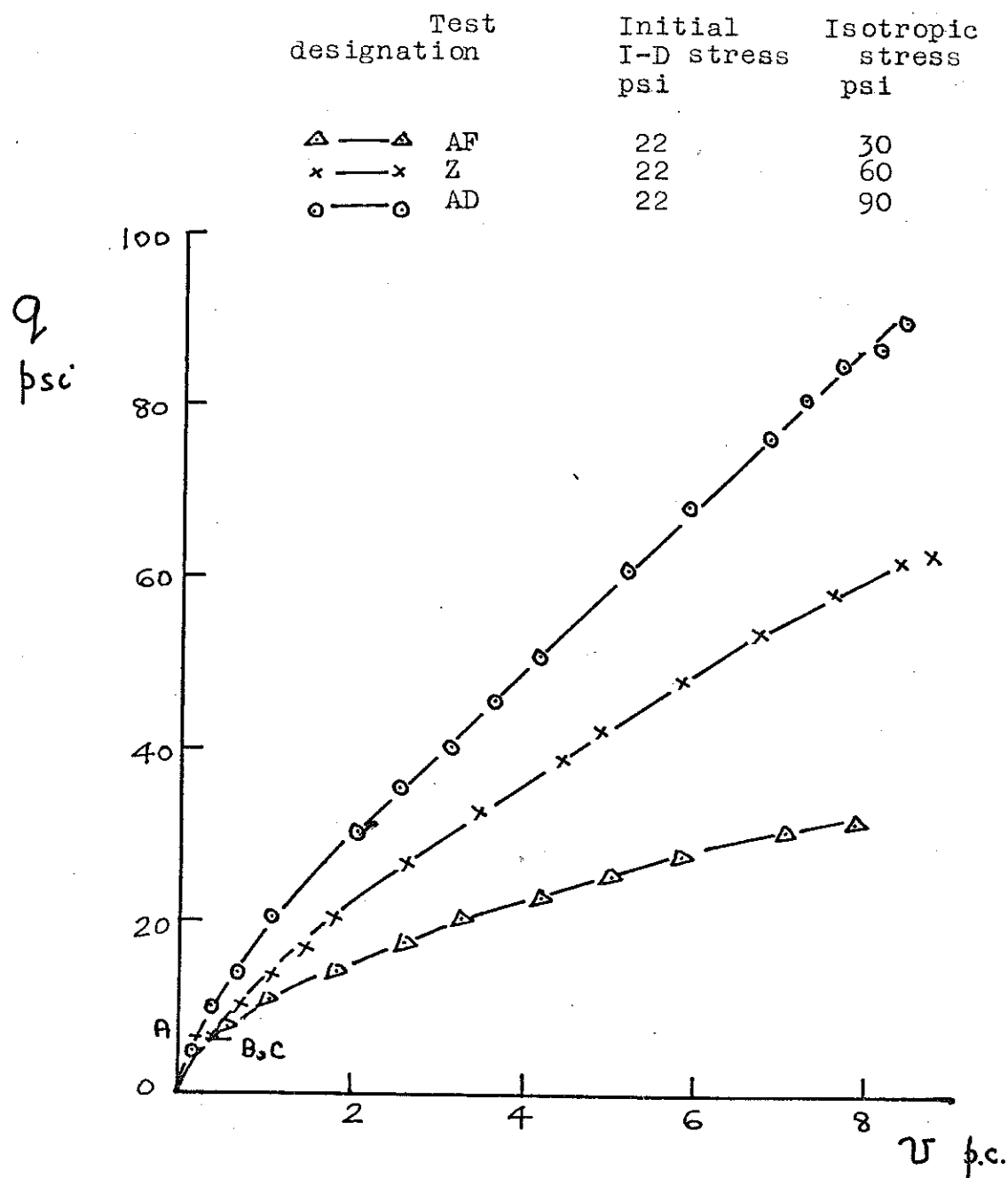


Fig. 4.44. The (q, v) characteristics of specimens AF, Z and AD prepared under initial I-D stress of 22 psi and sheared under fully drained condition with an applied stress path of slope 3 from isotropic stresses of 30, 60 and 90 psi respectively.

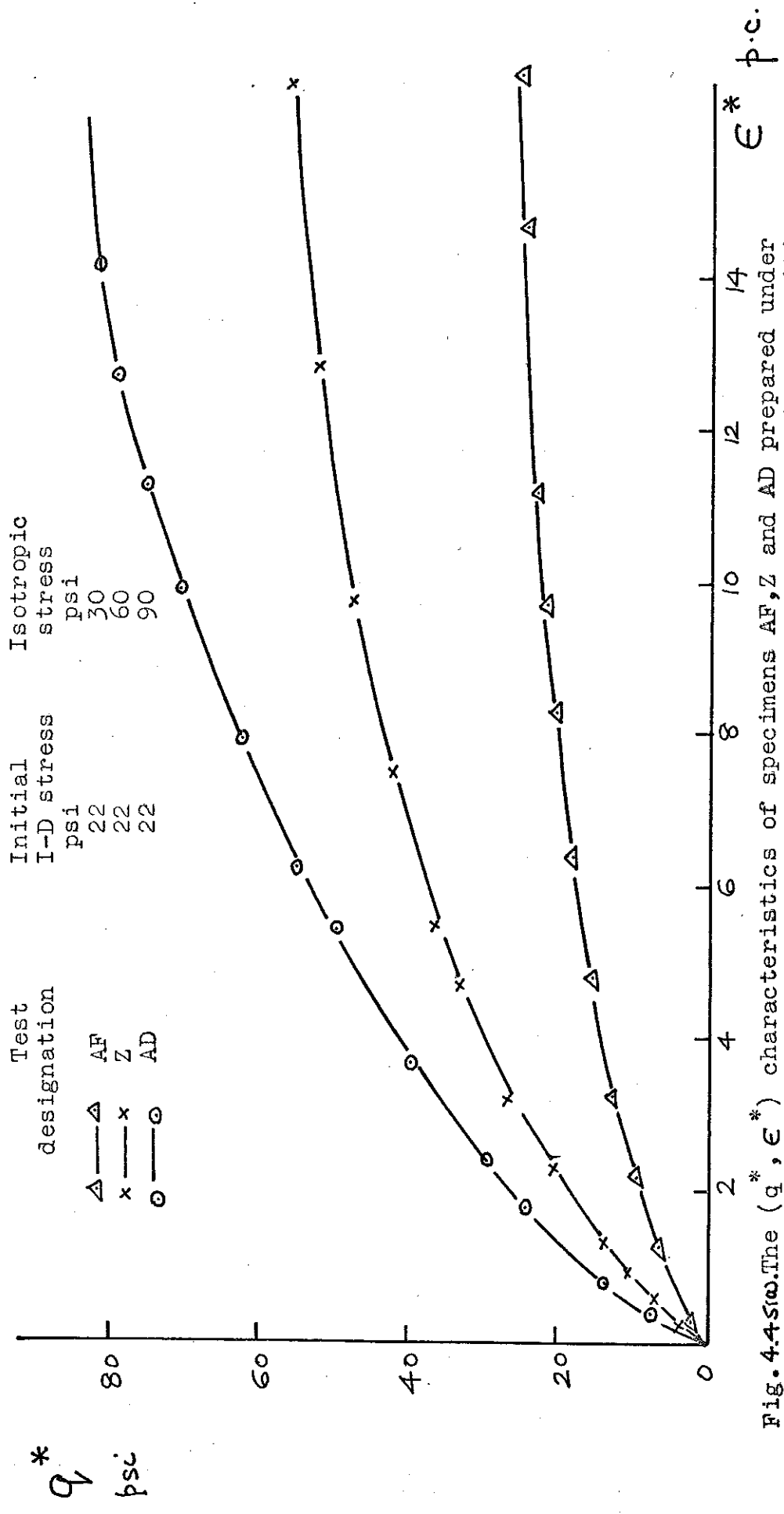


Fig. 4.4. The (q^*, E^*) characteristics of specimens AF, Z and AD prepared under initial I-D stress of 22 psi and sheared under fully drained condition with an applied stress path of slope 3 from isotropic stresses of 30, 60 and 90 psi respectively.