

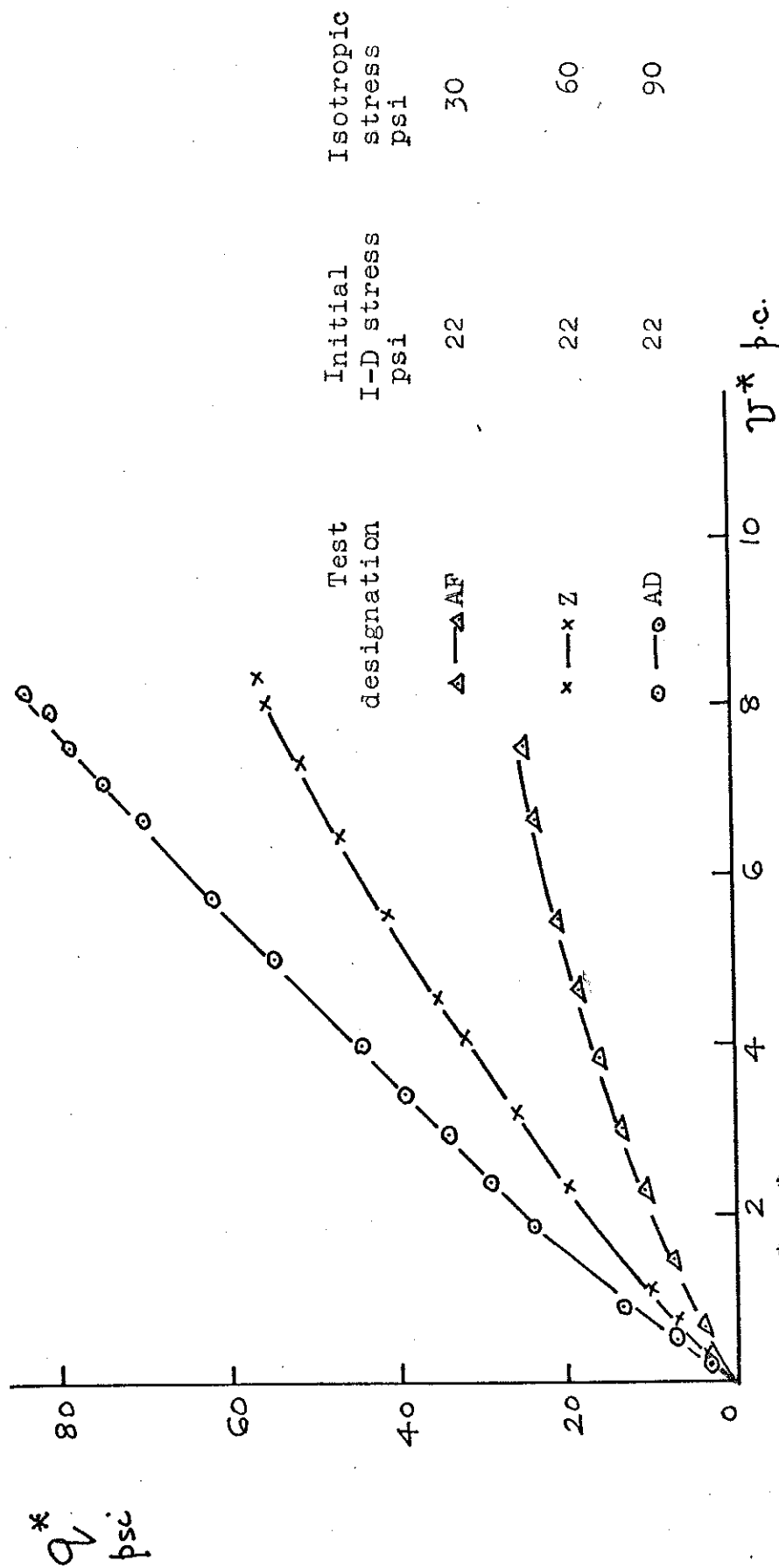


Fig. 4.45(b). The (q^*, v^*) characteristics of specimens AF, Z and AD prepared under an initial I-D stress of 22 psi and sheared under fully drained condition with an applied stress path of slope 3 from isotropic stresses of 30, 60 and 90 psi respectively.

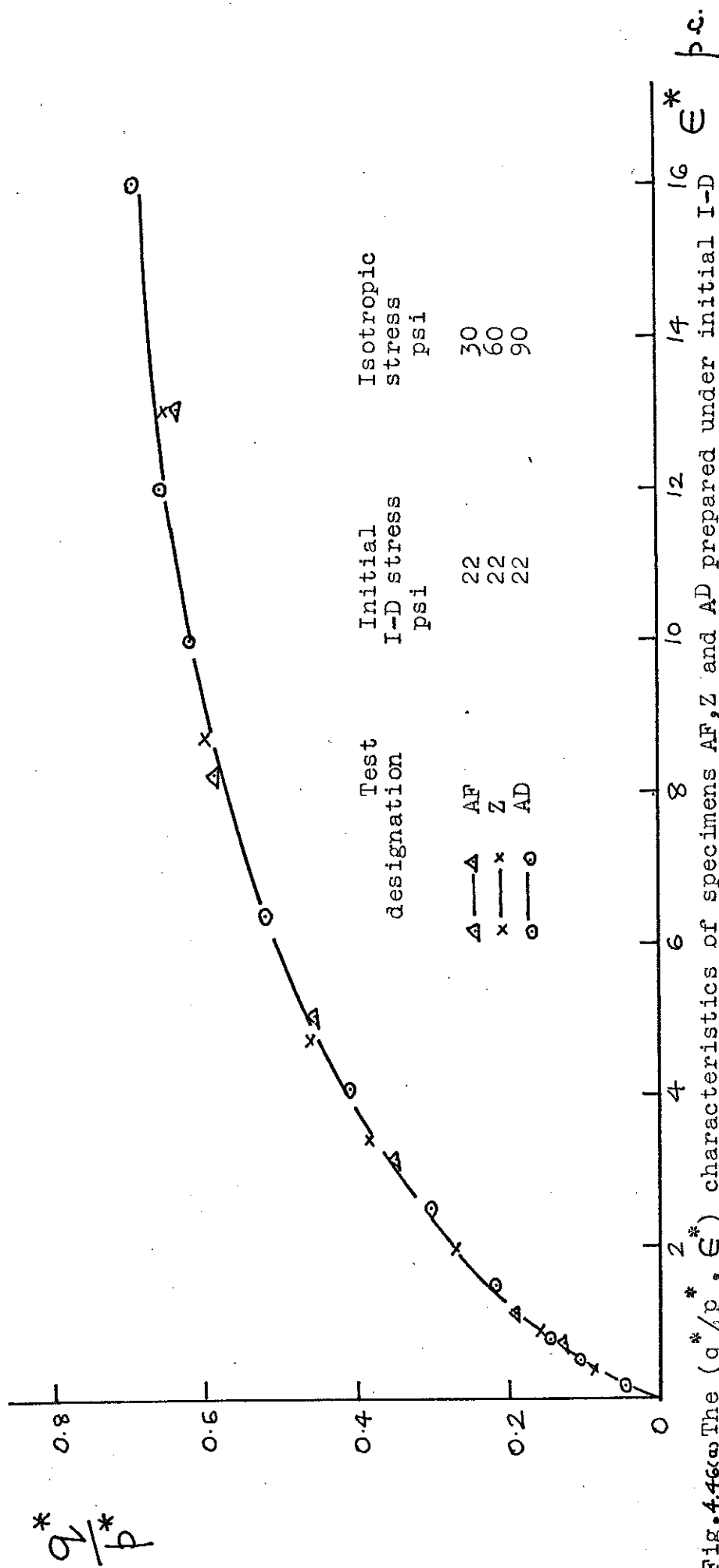


Fig. 4.46. The $(q^*/p^*, \epsilon^*)$ characteristics of specimens AF, Z and AD prepared under initial I-D stress of 22 psi and sheared under fully drained condition with an applied stress path of slope 3 from isotropic stresses of 30, 60 and 90 psi respectively.

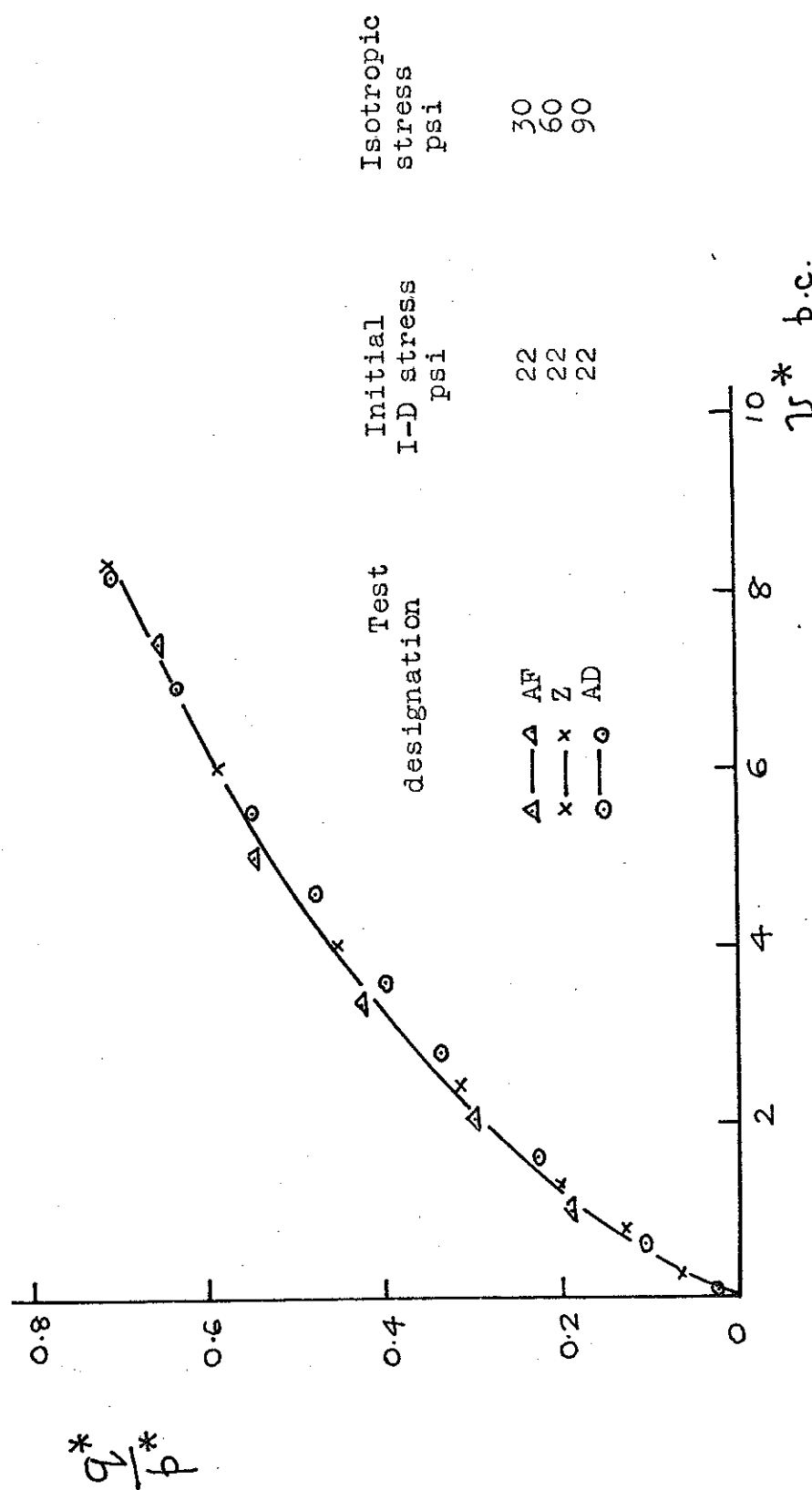


Fig. 4.46(b) The $(q^*/p^*, v^*)$ characteristics of specimens AF, Z and AD prepared under initial I-D stress of 22 psi and sheared under fully drained condition with an applied stress path of slope 3 from isotropic stresses of 30, 60 and 90 psi respectively.

△ Undrained test

x Constant p test

○ Fully drained test

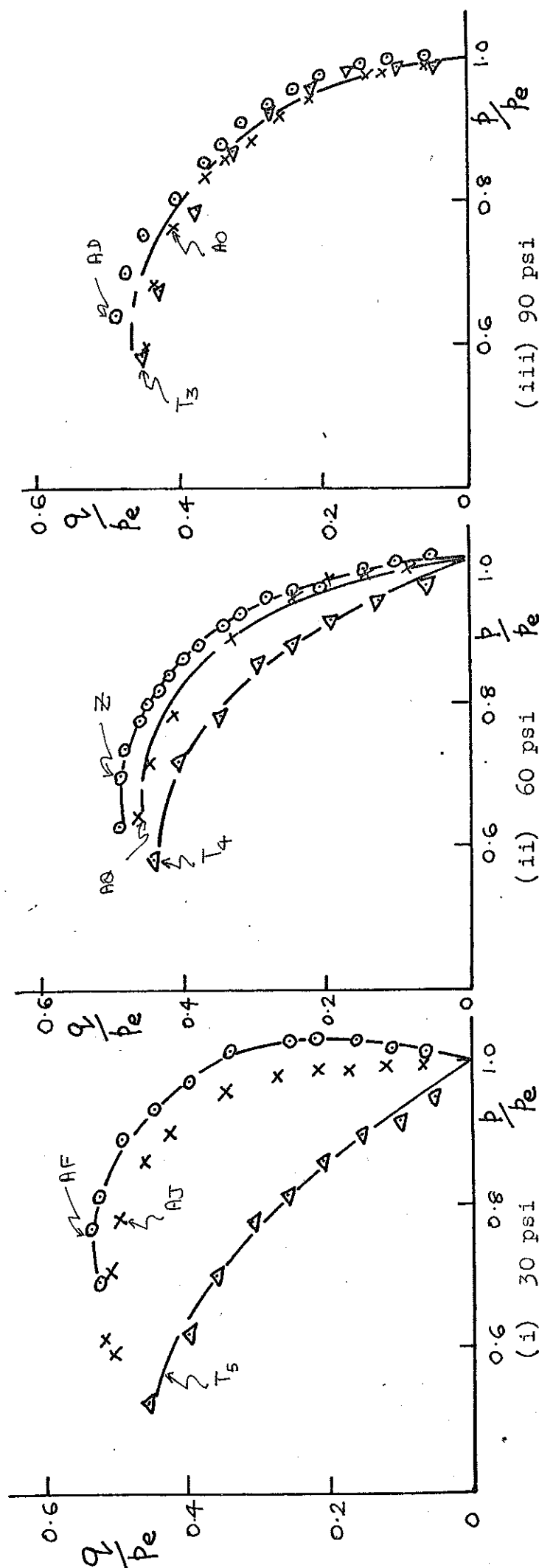


Fig. 4.47. The (q/p_e , p/p_e) characteristics of fully drained, constant p and undrained tests from isotropic stresses of (i) 30 psi (ii) 60 psi and (iii) 90 psi.

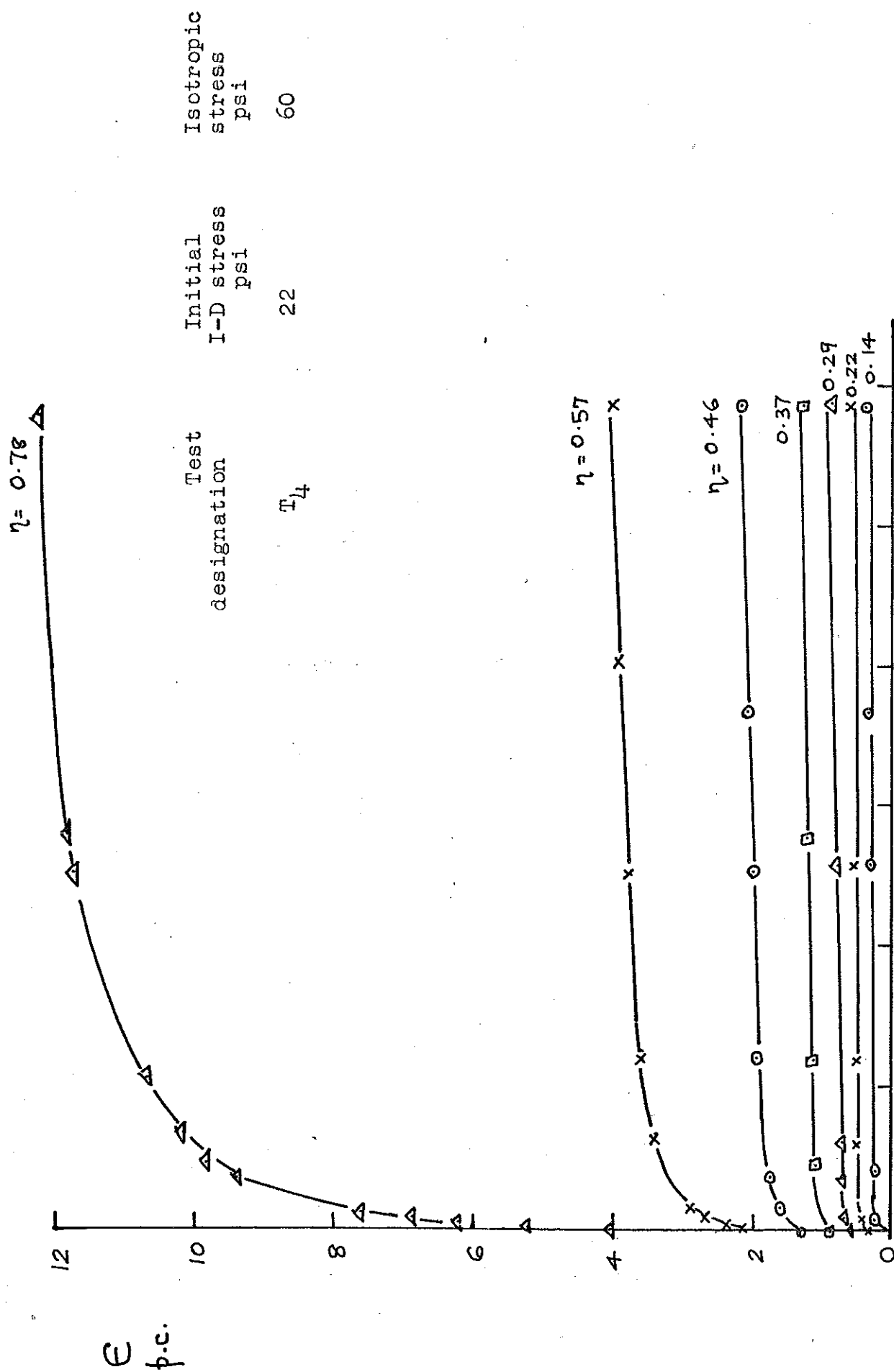


Fig. 4.48. The (e, t) characteristics for seven increments of deviator stresses in the undrained test T_4 .

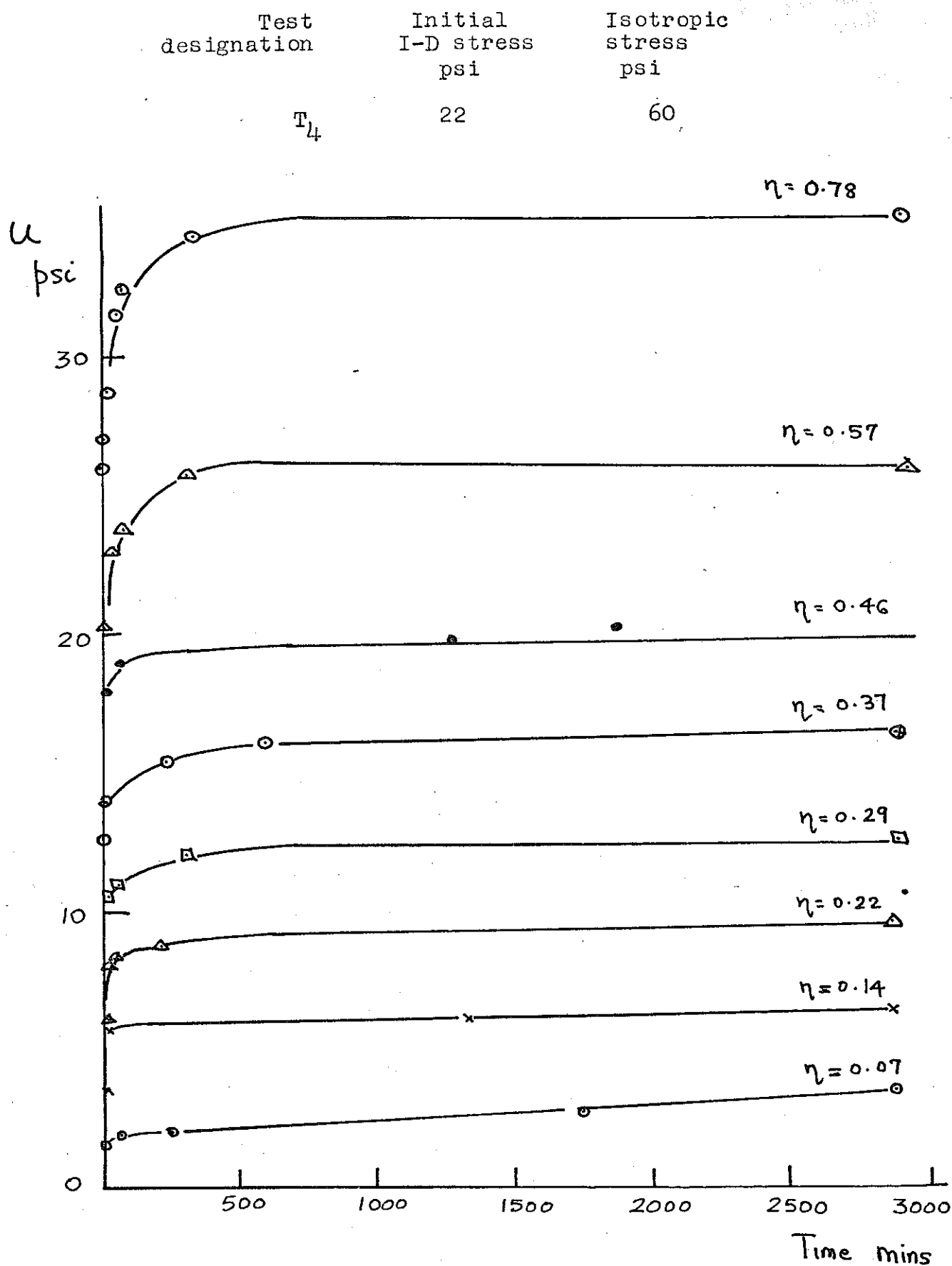


Fig. 4.49 The (u, t) characteristics for eight increments of deviator stresses in the undrained test T_4 .

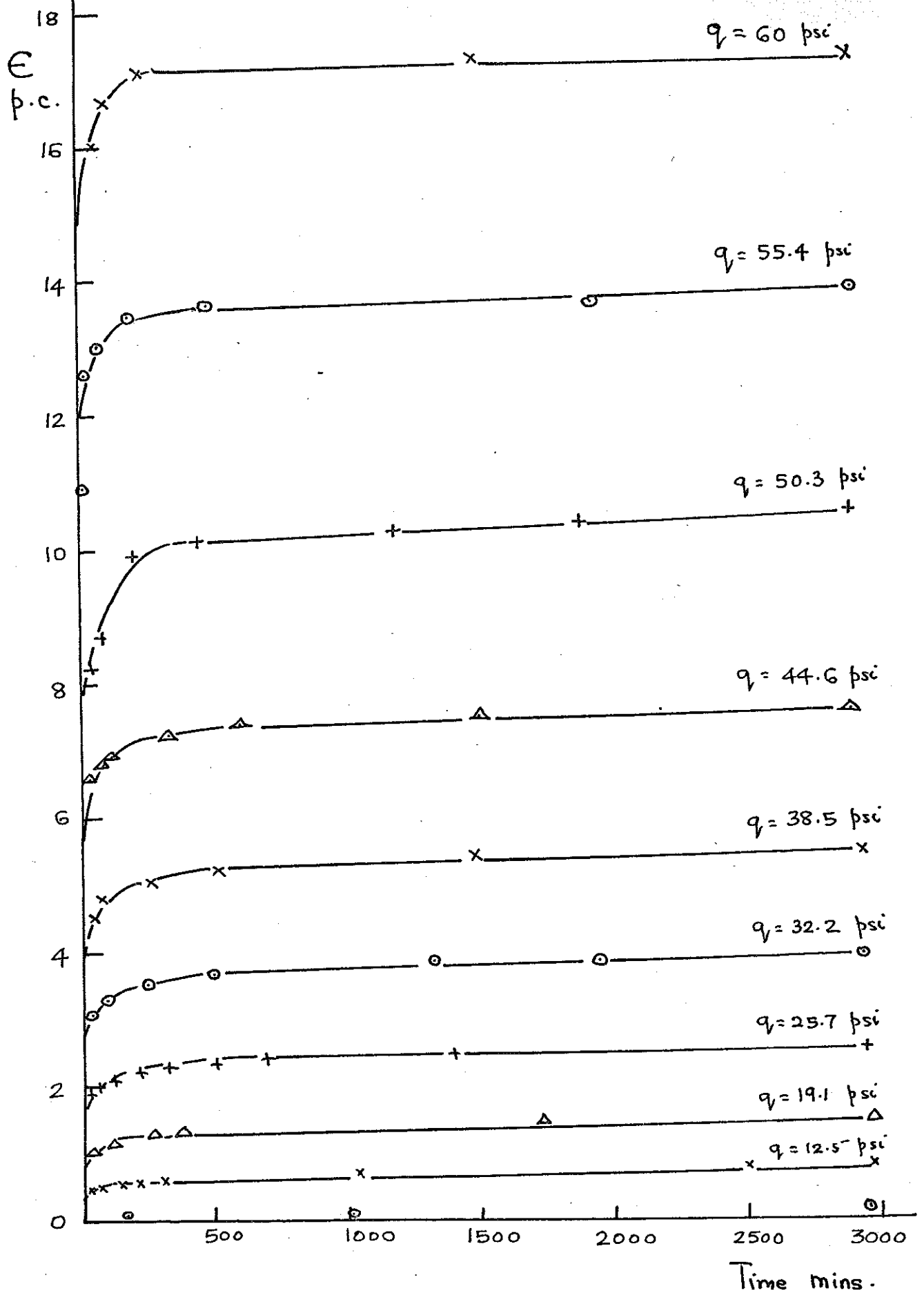


Fig.4.50. The (E, t) characteristics for ten increments of stresses in the fully drained test on specimen R sheared under an applied stress path of slope 3 from an isotropic stress of 60 psi.

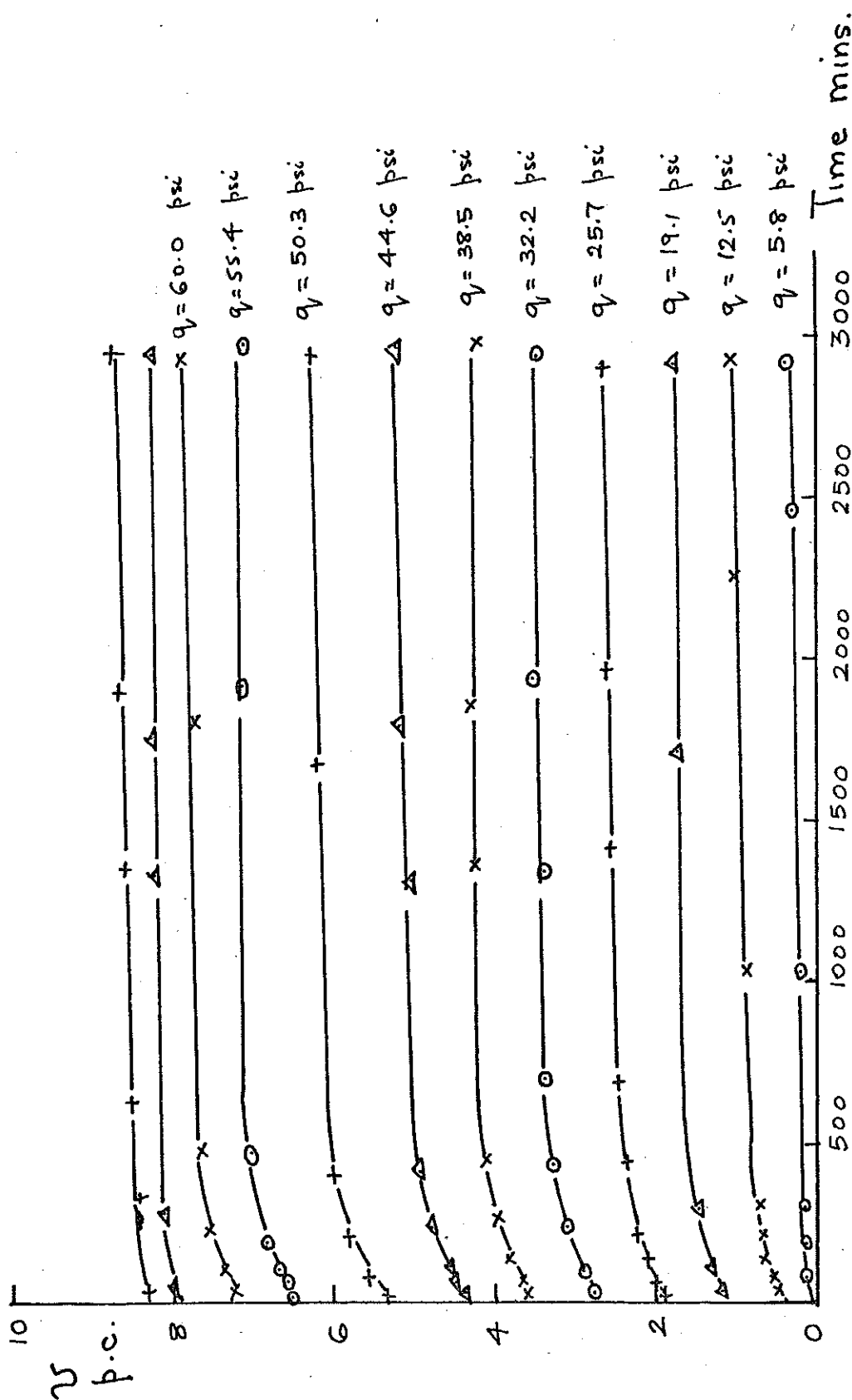


Fig. 4.51. The (v, t) characteristics for twelve increments of stresses in the fully drained test on specimen R sheared under an applied stress path of slope 3 from an isotropic stress of 60 psi.

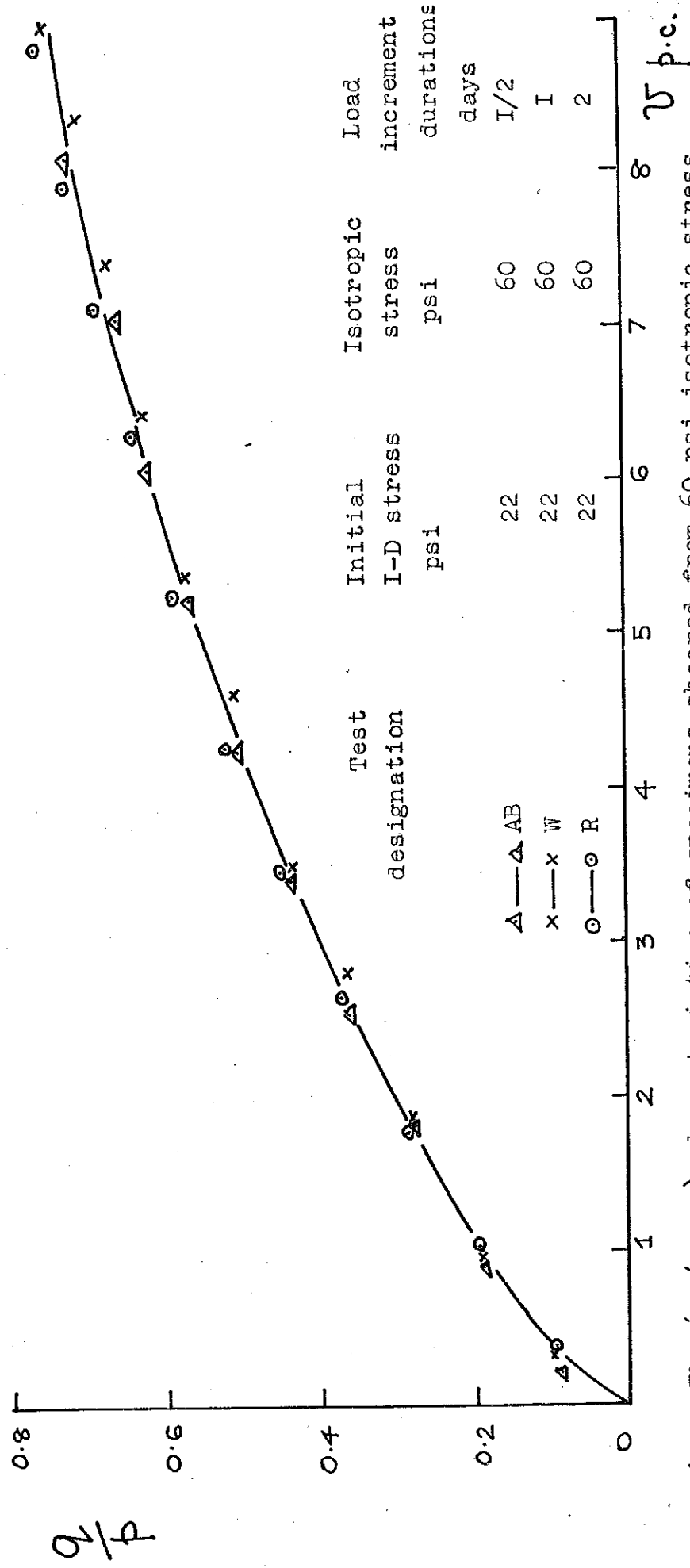


Fig. 4.52. The (q/p , v) characteristics of specimens sheared from 60 psi isotropic stress along an applied stress path of slope 3 with load increment durations of I/2 a day, I day and 2 days.

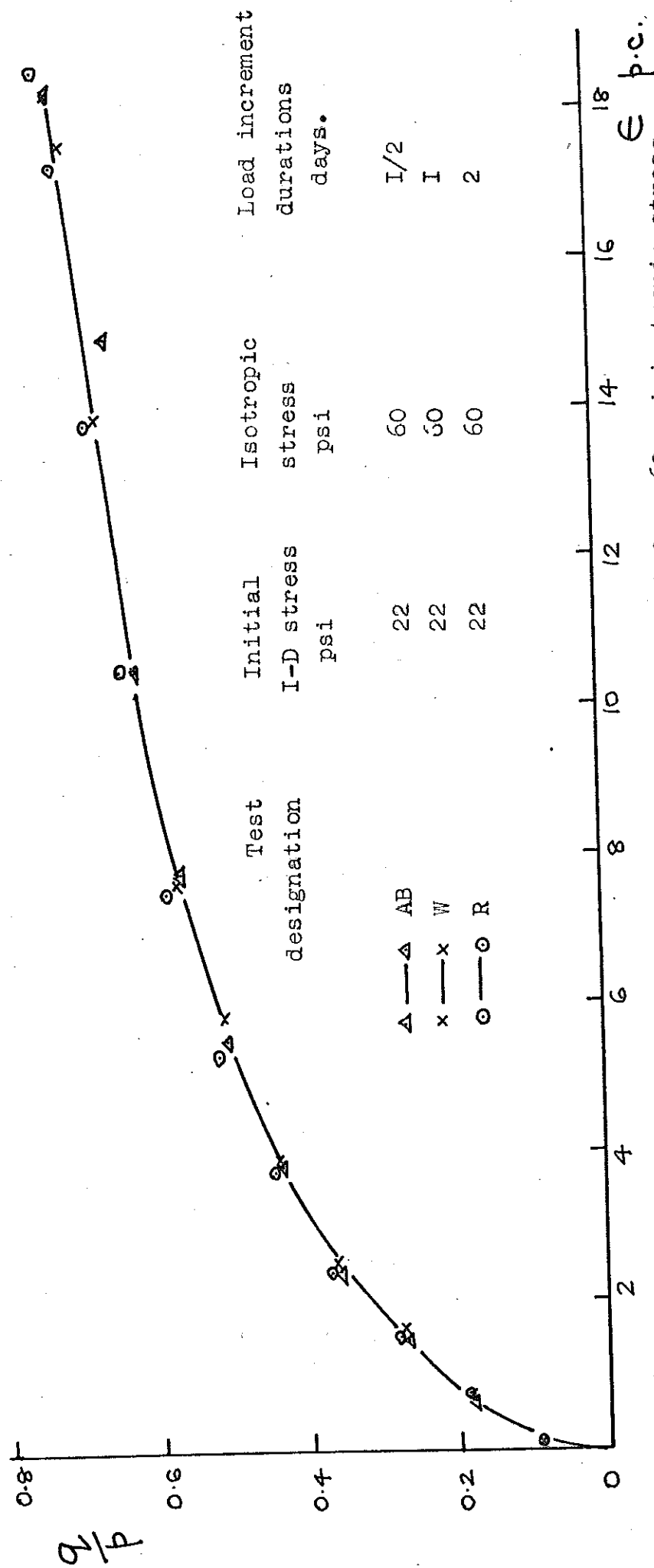


Fig. 4.53. The $(q/p, e)$ characteristics of specimens sheared from 60 psi isotropic stress along applied stress paths of slope 3 with load increment durations of 1/2 a day, 1 day and 2 days .

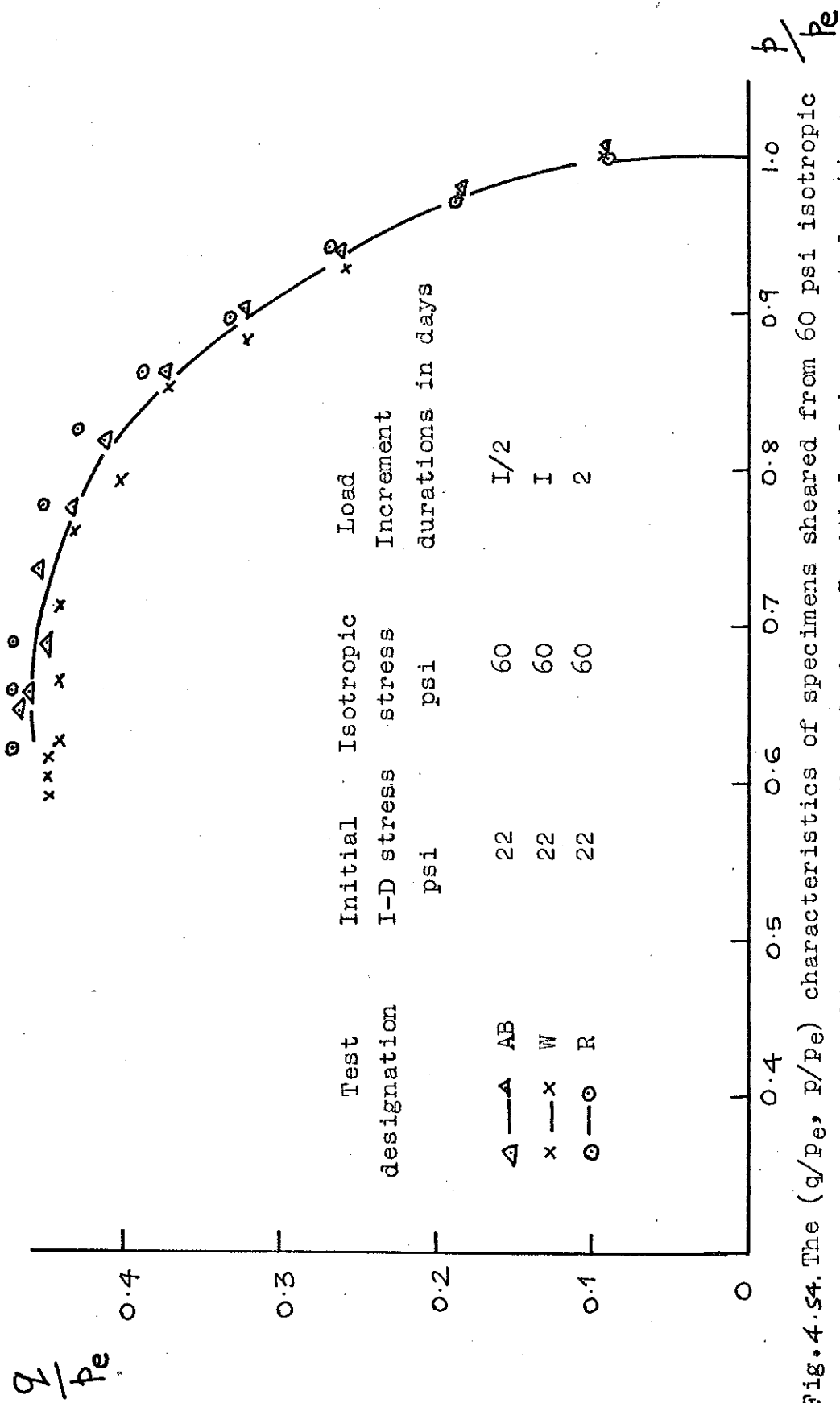


Fig. 4.54. The $(q/p_e, p/p_e)$ characteristics of specimens sheared from 60 psi isotropic stress along applied stress paths of slope 3 with load increment durations of 1/2 a day, 1 day and 2 days respectively.

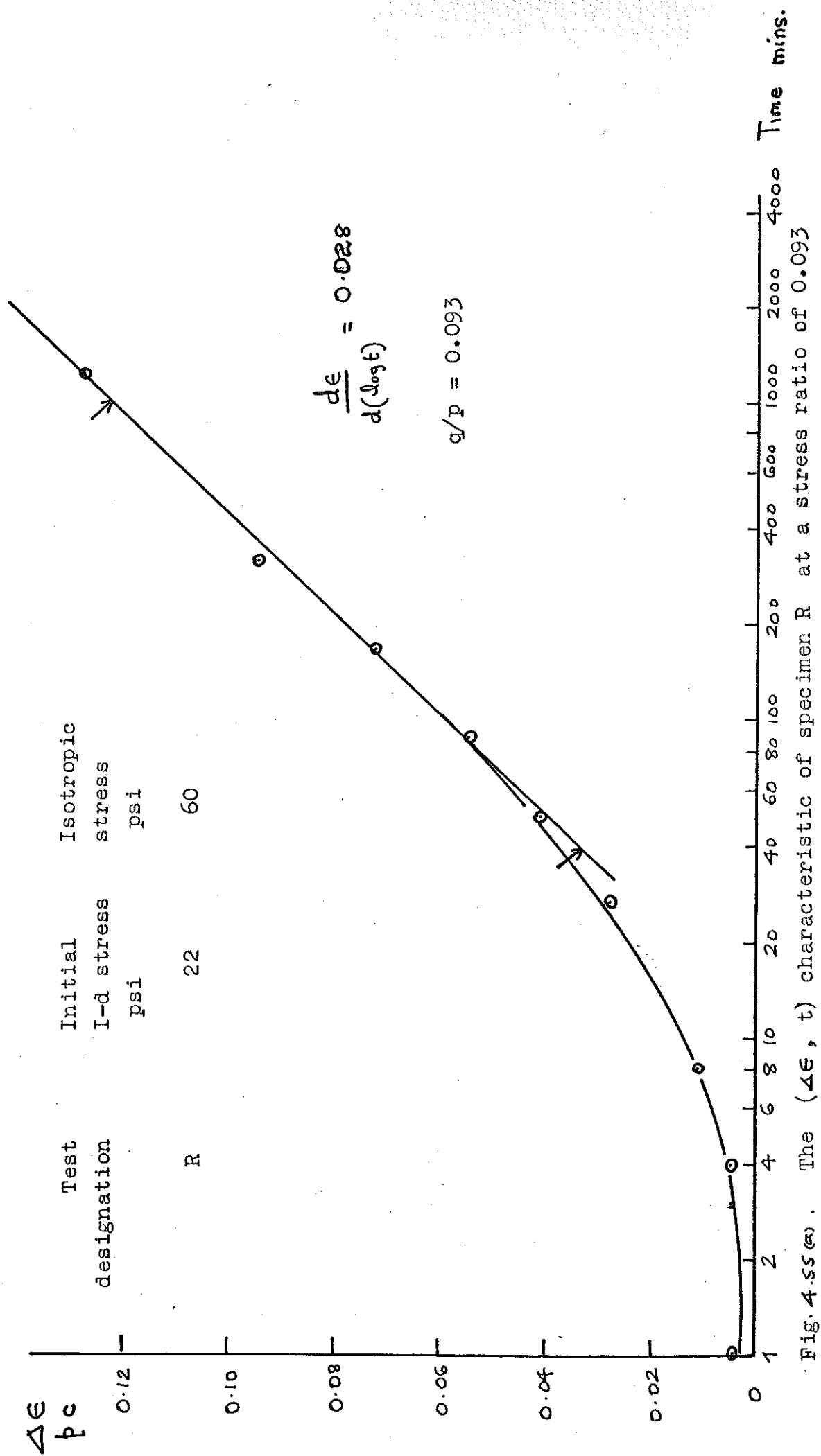


Fig. 4.55(a). The $(\Delta\epsilon, t)$ characteristic of specimen R at a stress ratio of 0.093

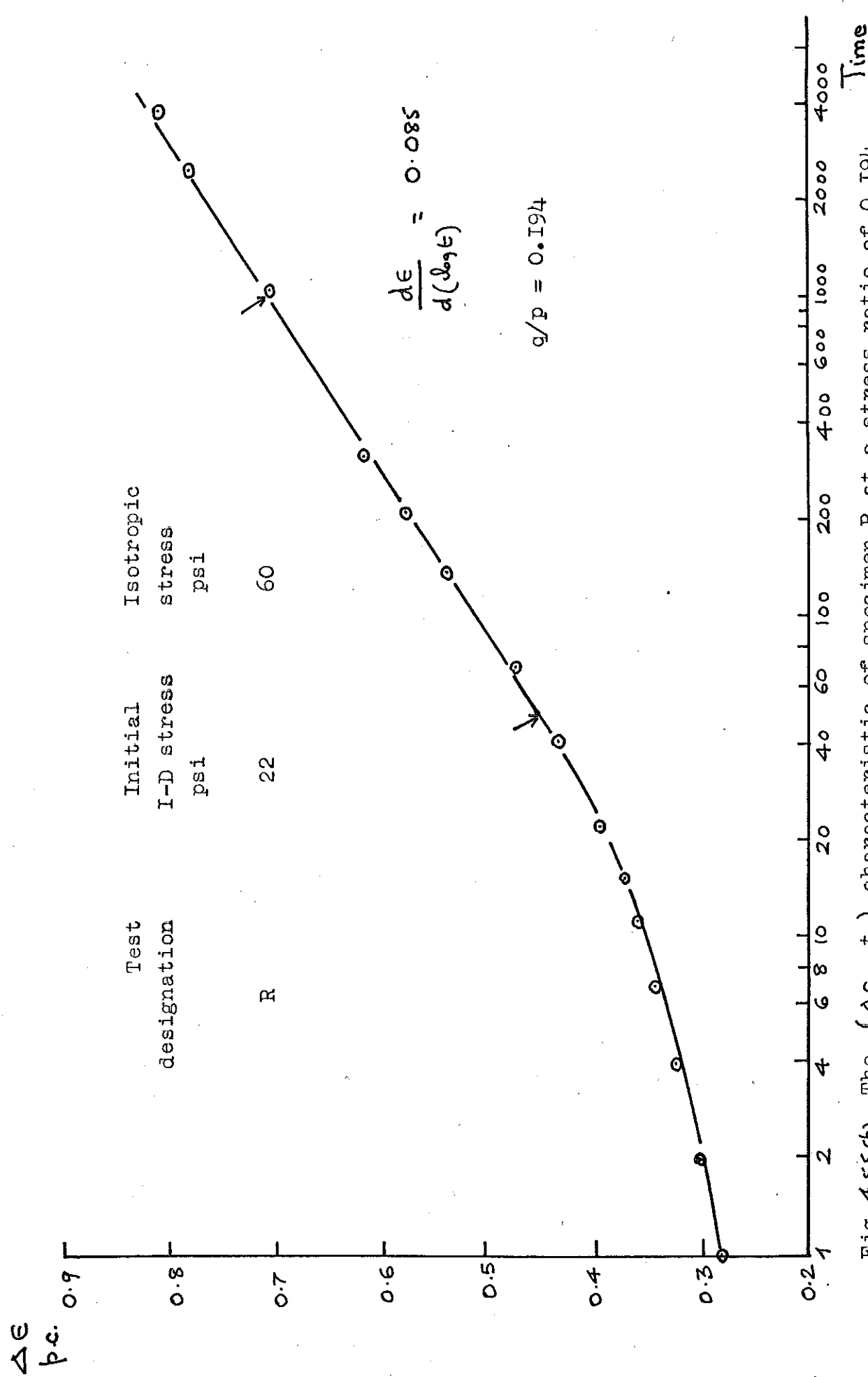


Fig. 4.55(b). The $(\Delta \epsilon, t)$ characteristic of specimen R at a stress ratio of 0.194

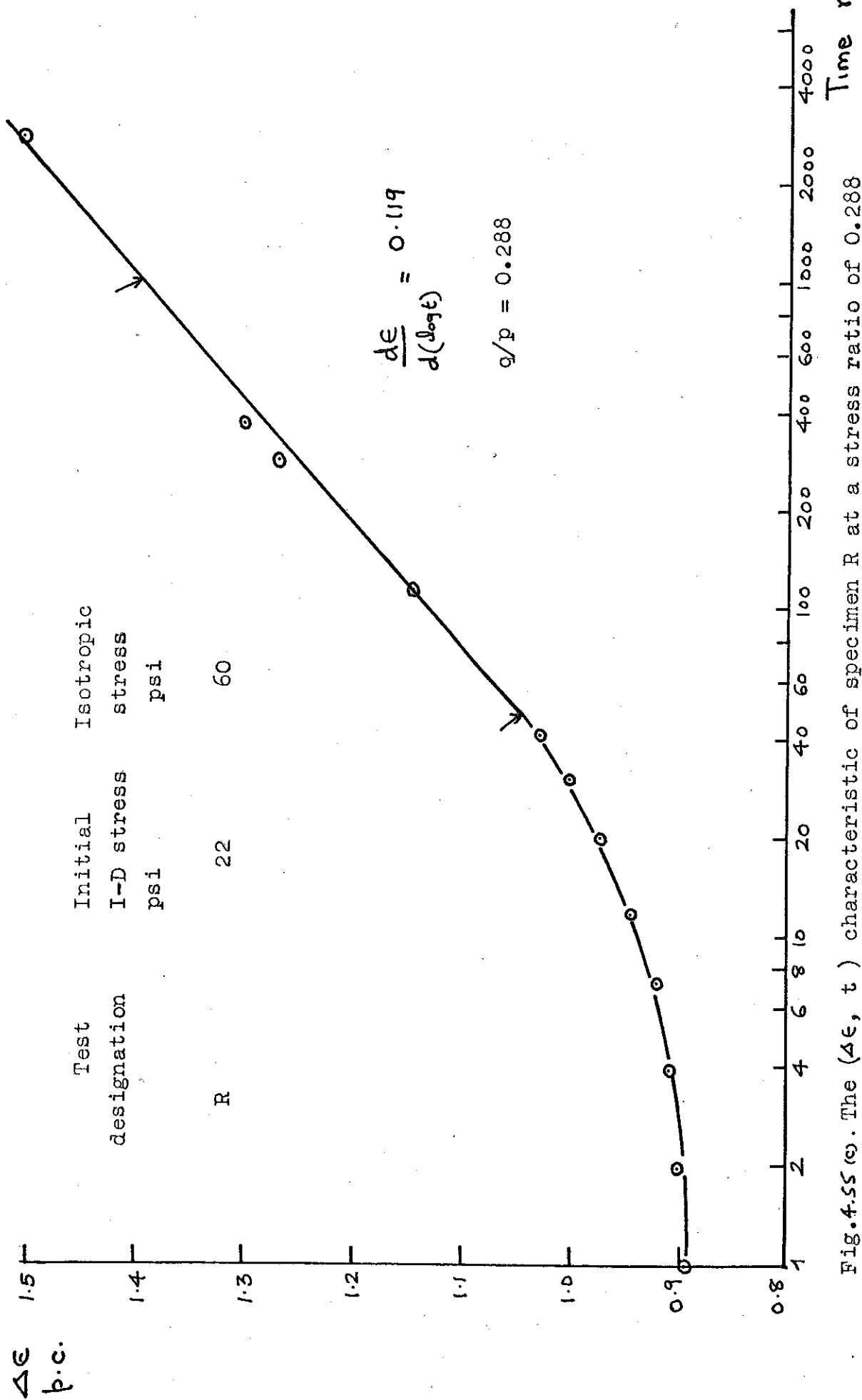


Fig. 4.55 (c). The $(\Delta \epsilon, t)$ characteristic of specimen R at a stress ratio of 0.288

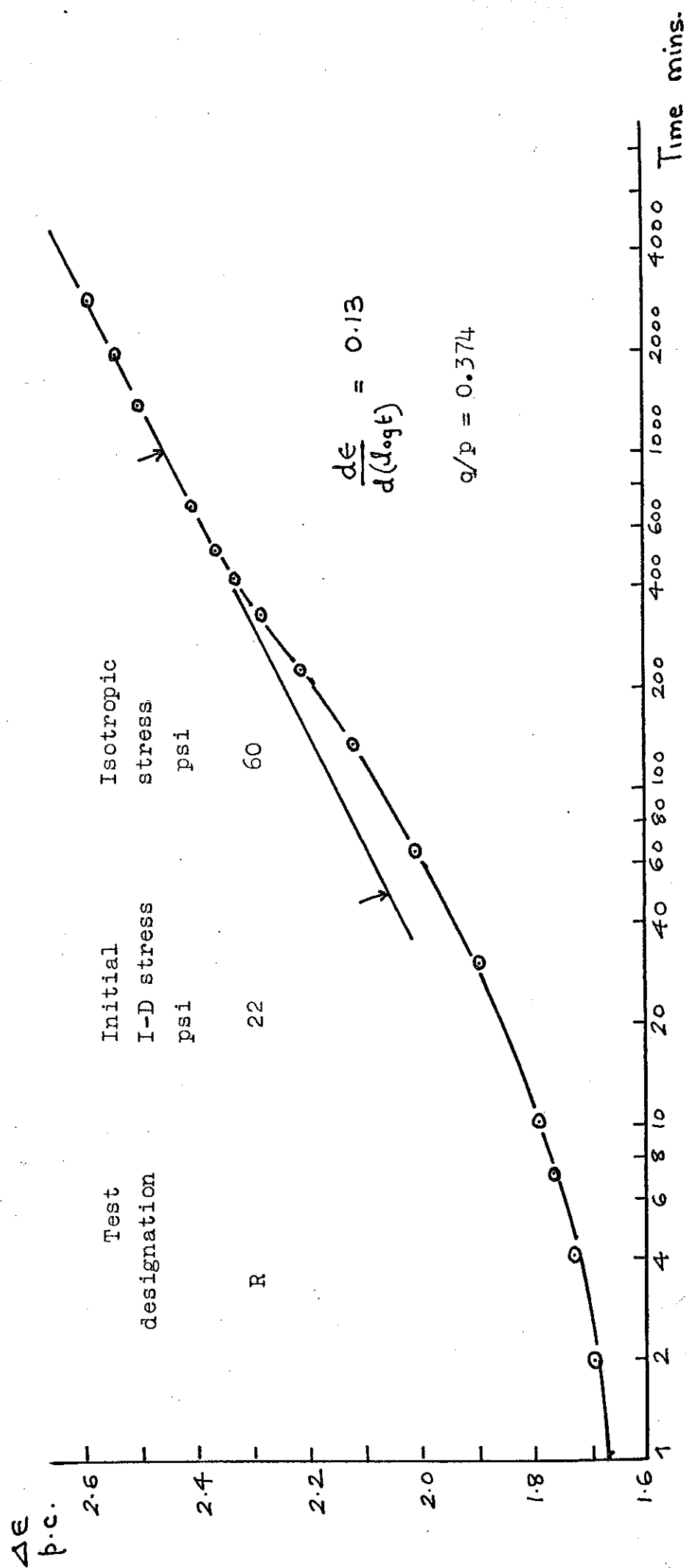


Fig. The $(\Delta \epsilon, t)$ characteristic of specimen R at a stress ratio of 0.374

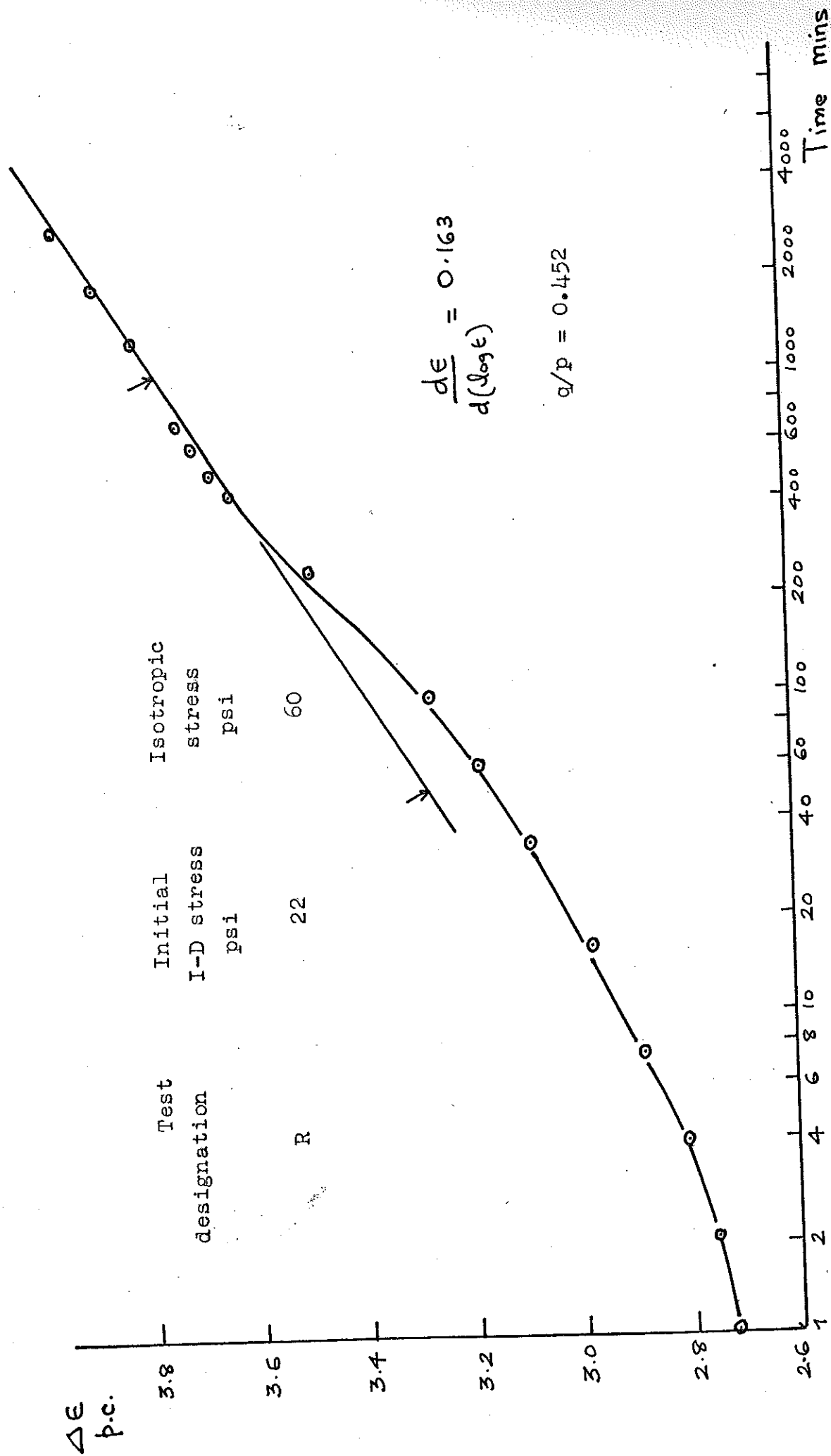


Fig. 4.55. The $(\Delta \epsilon, t)$ characteristic of specimen R at a stress ratio of 0.452

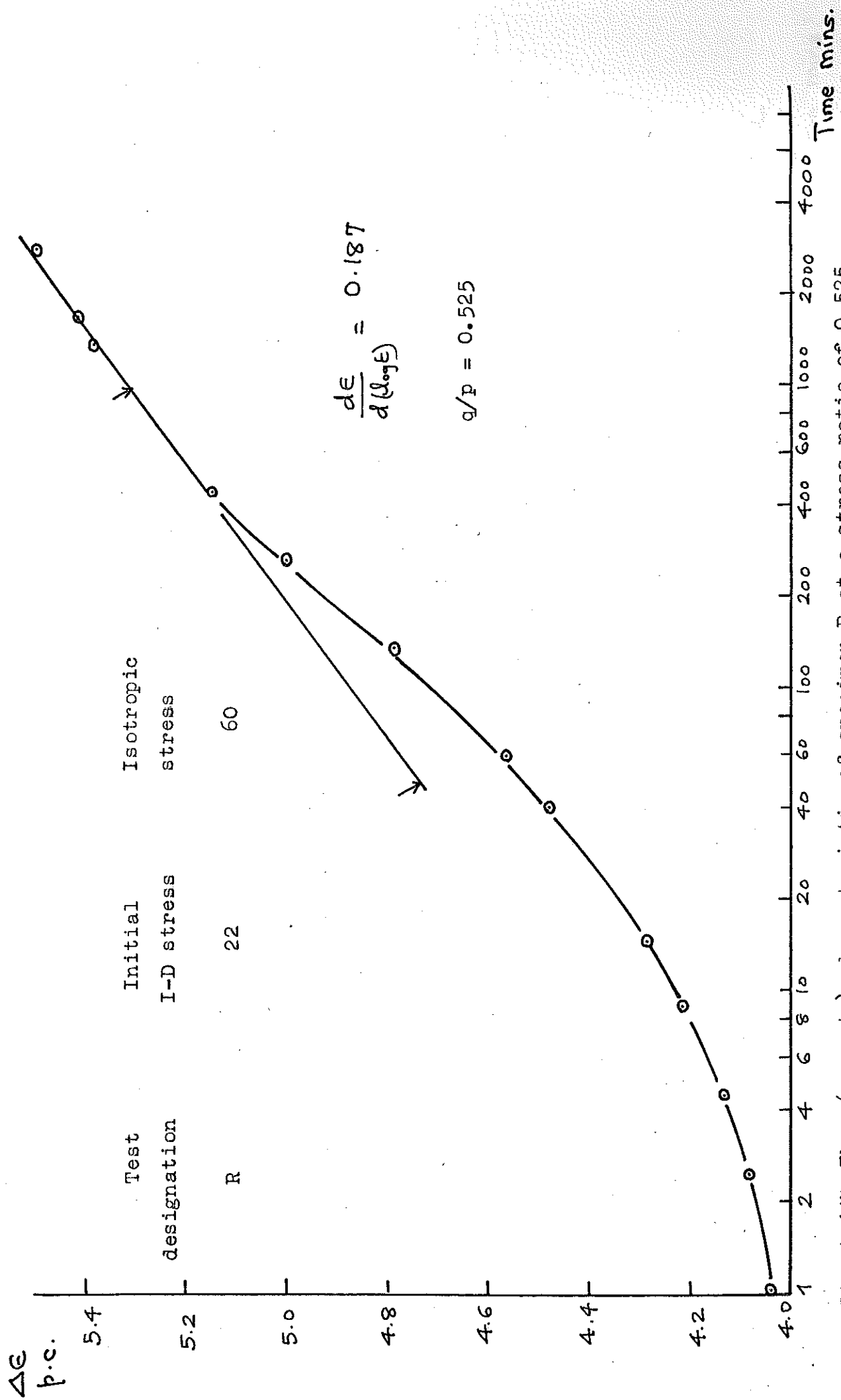


Fig. 4.55 (f). The $(\Delta \epsilon, t)$ characteristic of specimen R at a stress ratio of 0.525

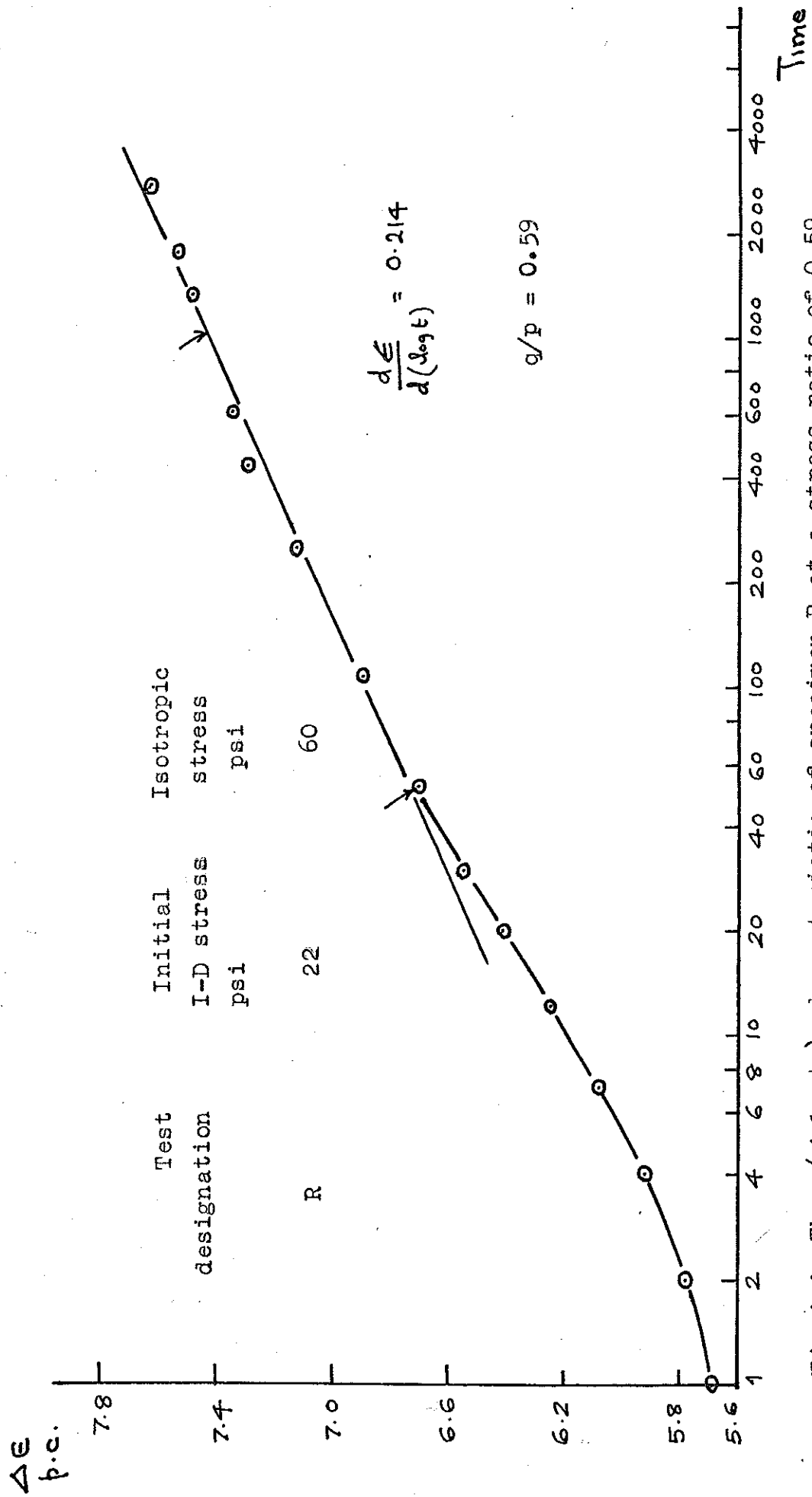


Fig. 4.55(q). The $(\Delta\epsilon, t)$ characteristic of specimen R at a stress ratio of 0.59

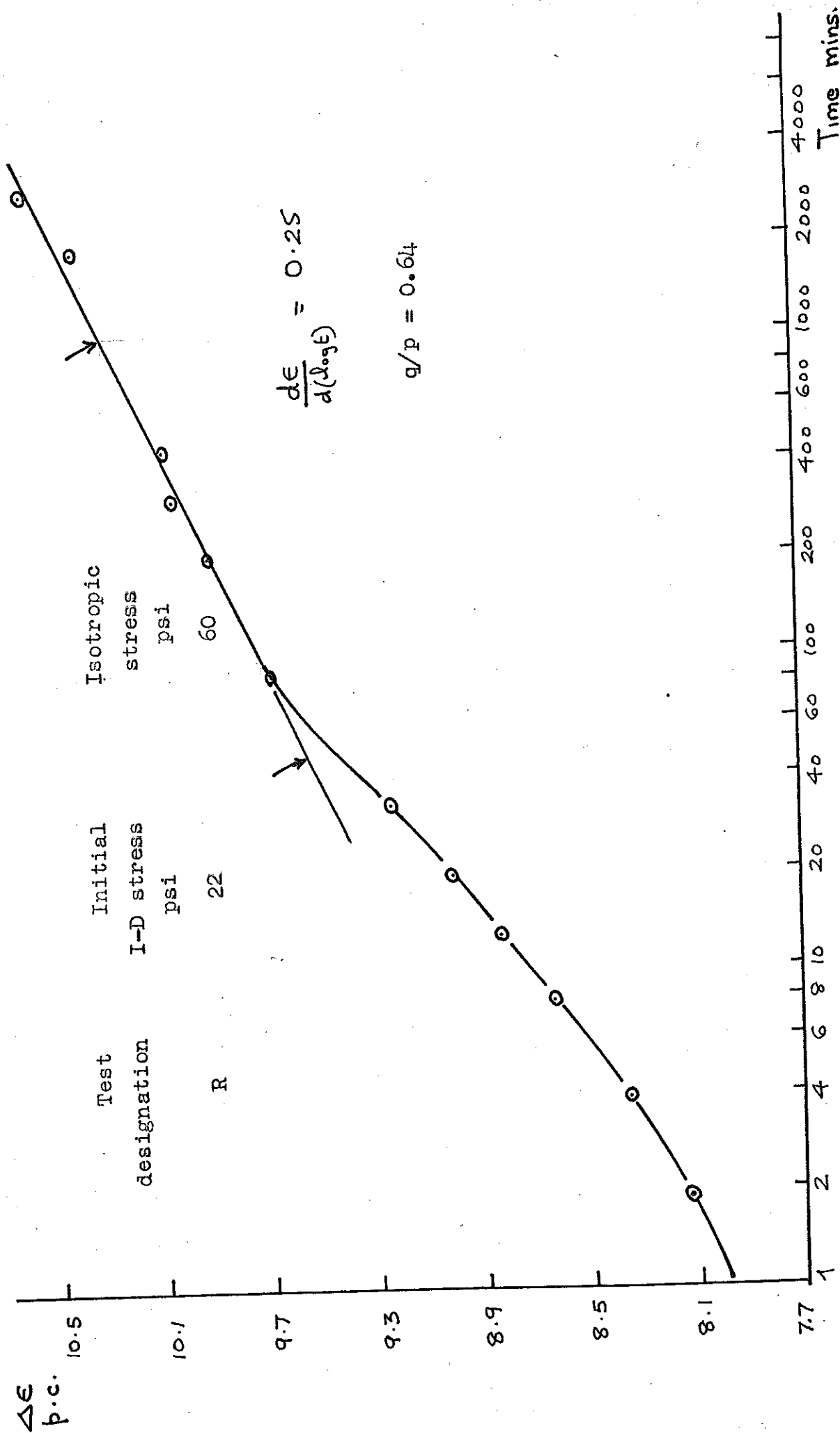


Fig. 4.55(h). The $(\Delta\epsilon, t)$ characteristic of specimen R at a stress ratio of 0.64

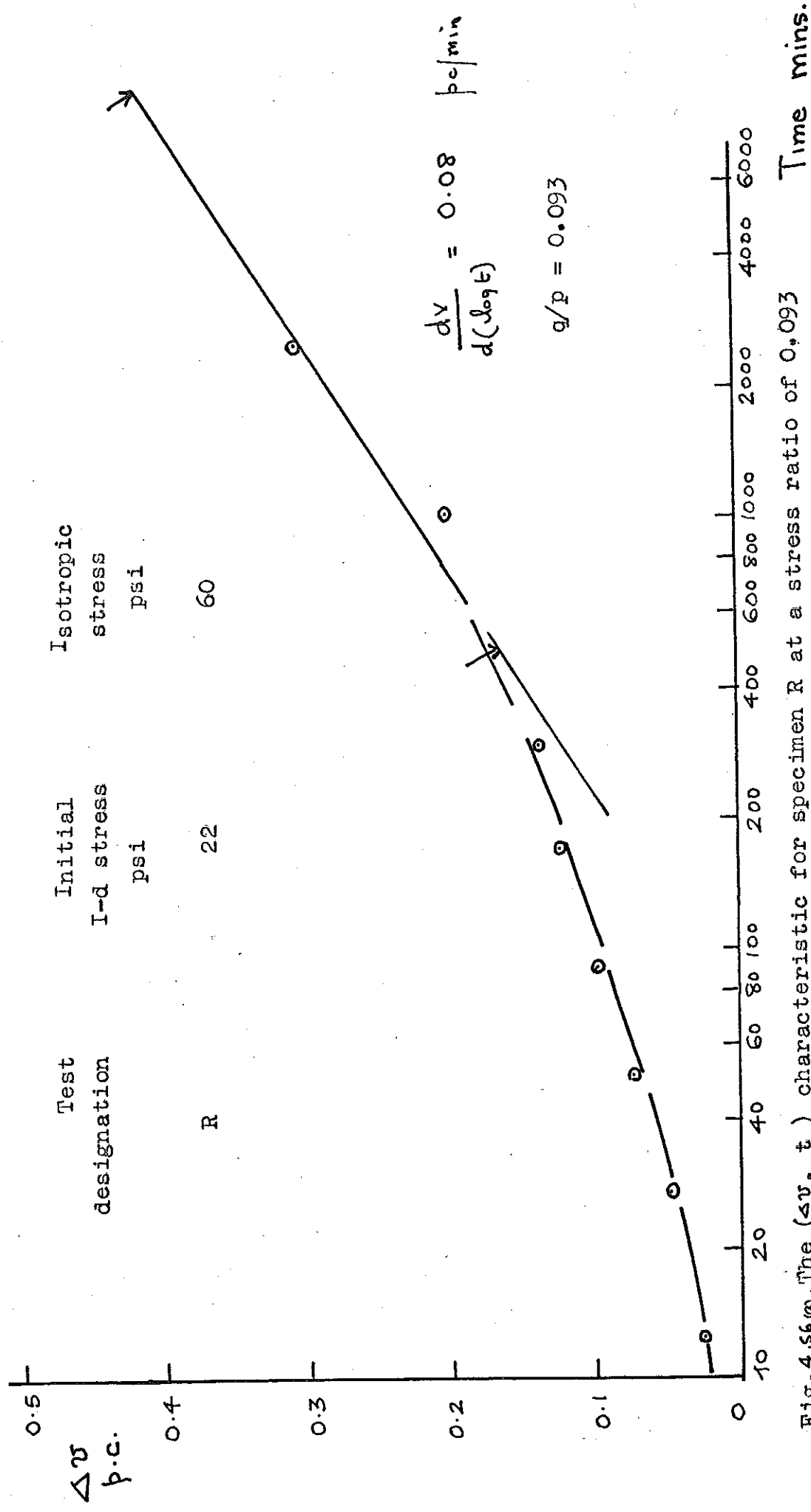


Fig. 4.56. The $(\Delta v, t)$ characteristic for specimen R at a stress ratio of 0.093

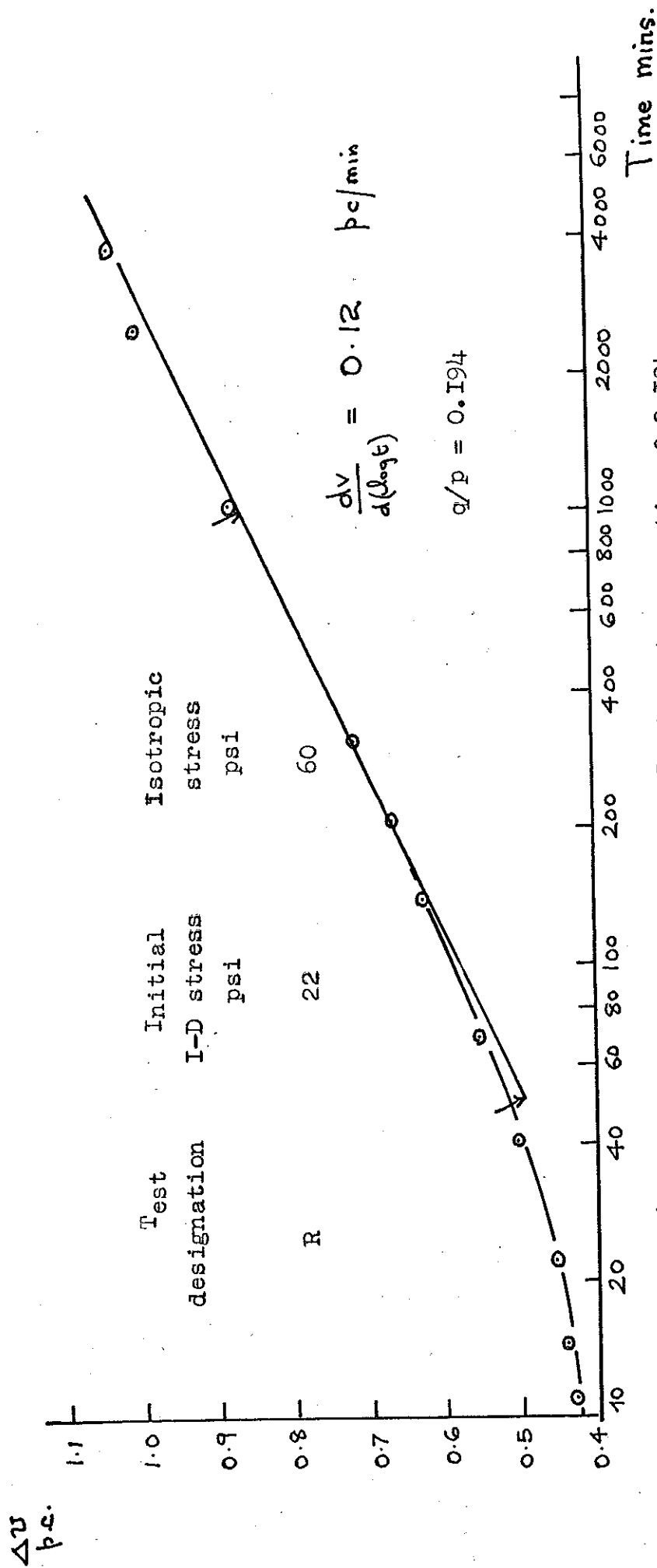


Fig. 4.56(b). The $(\Delta v, t)$ characteristic of specimen R at a stress ratio of 0.194

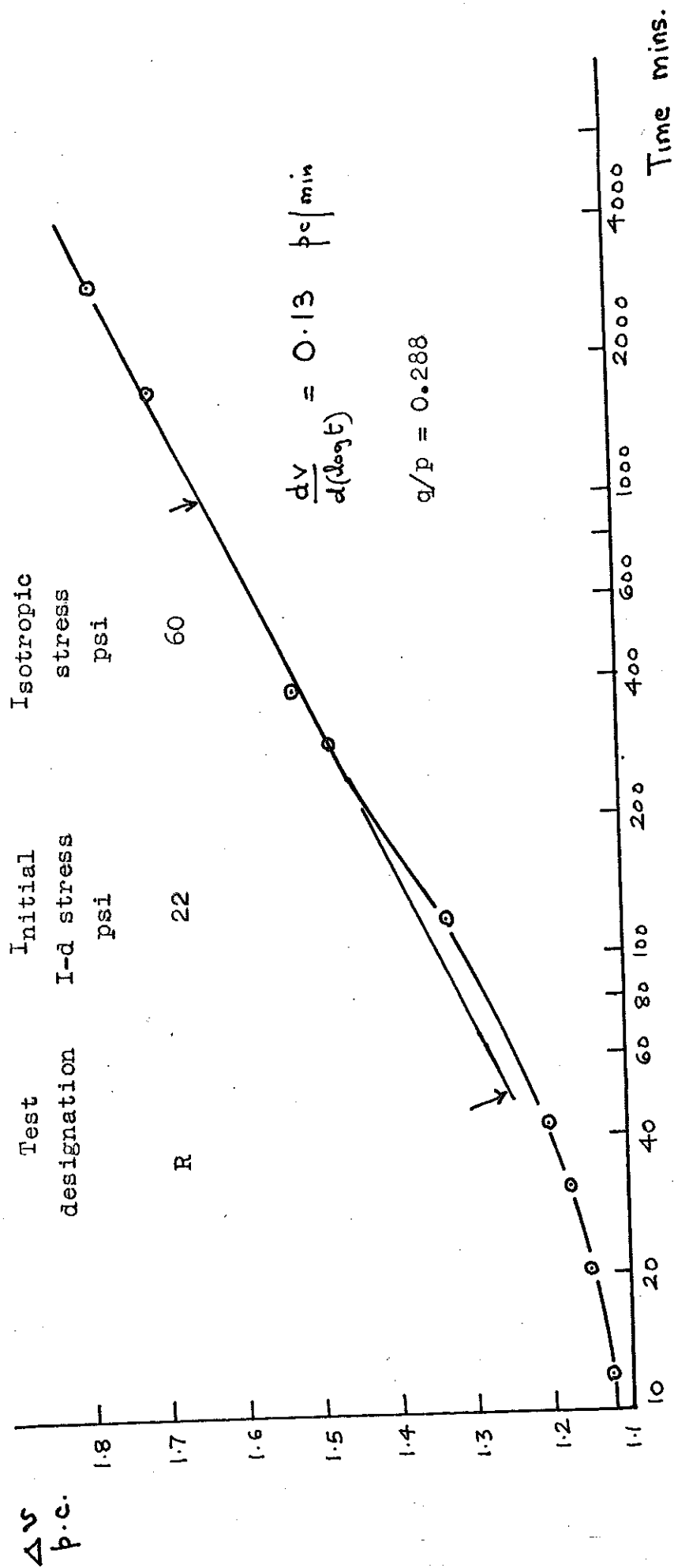
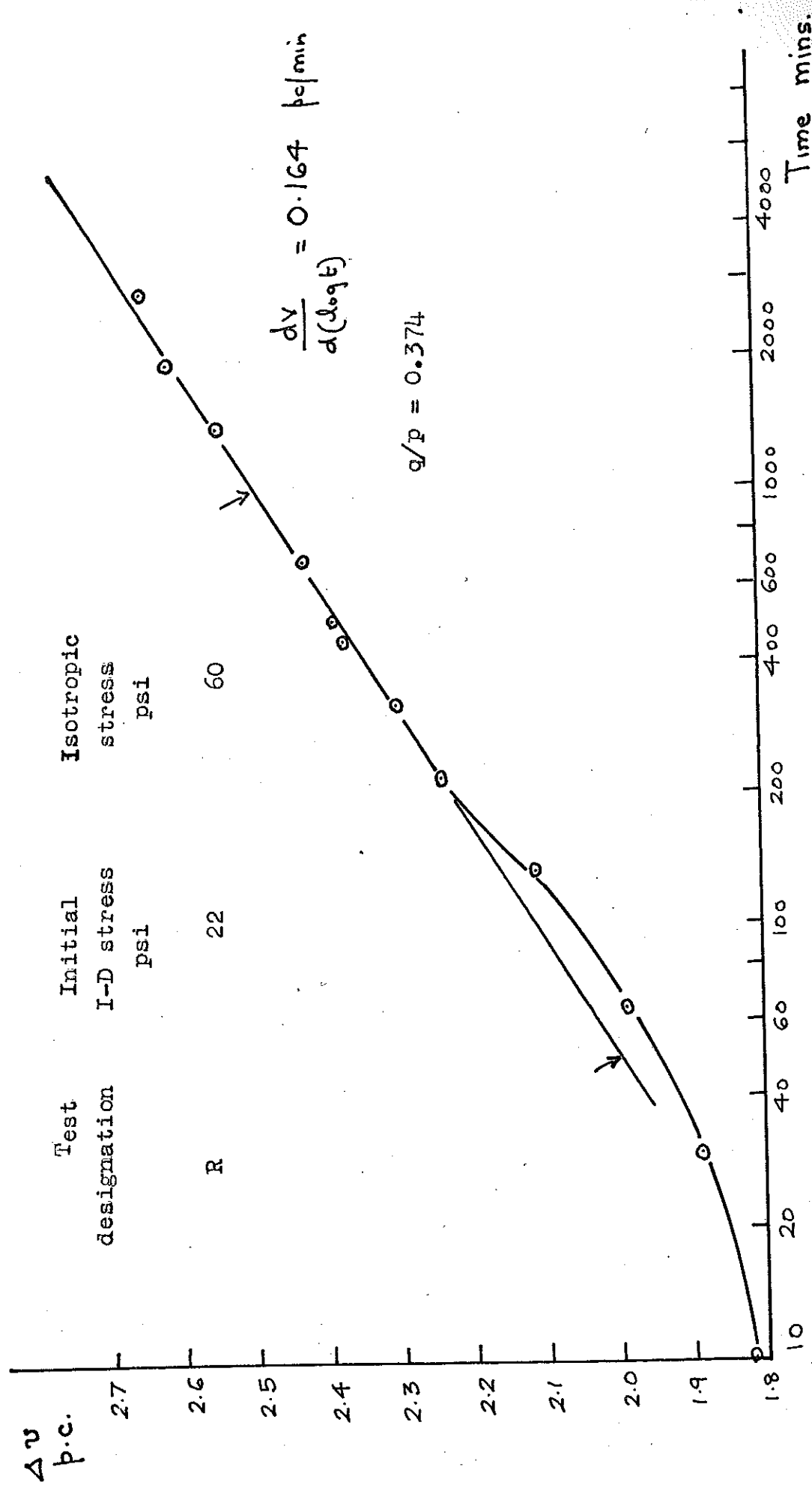


Fig. 4.56a The $(\Delta v, t)$ characteristic of specimen R at a stress ratio of 0.288



4.56(d) The $(\Delta v, t)$ characteristic of specimen R at a stress ratio of 0.374

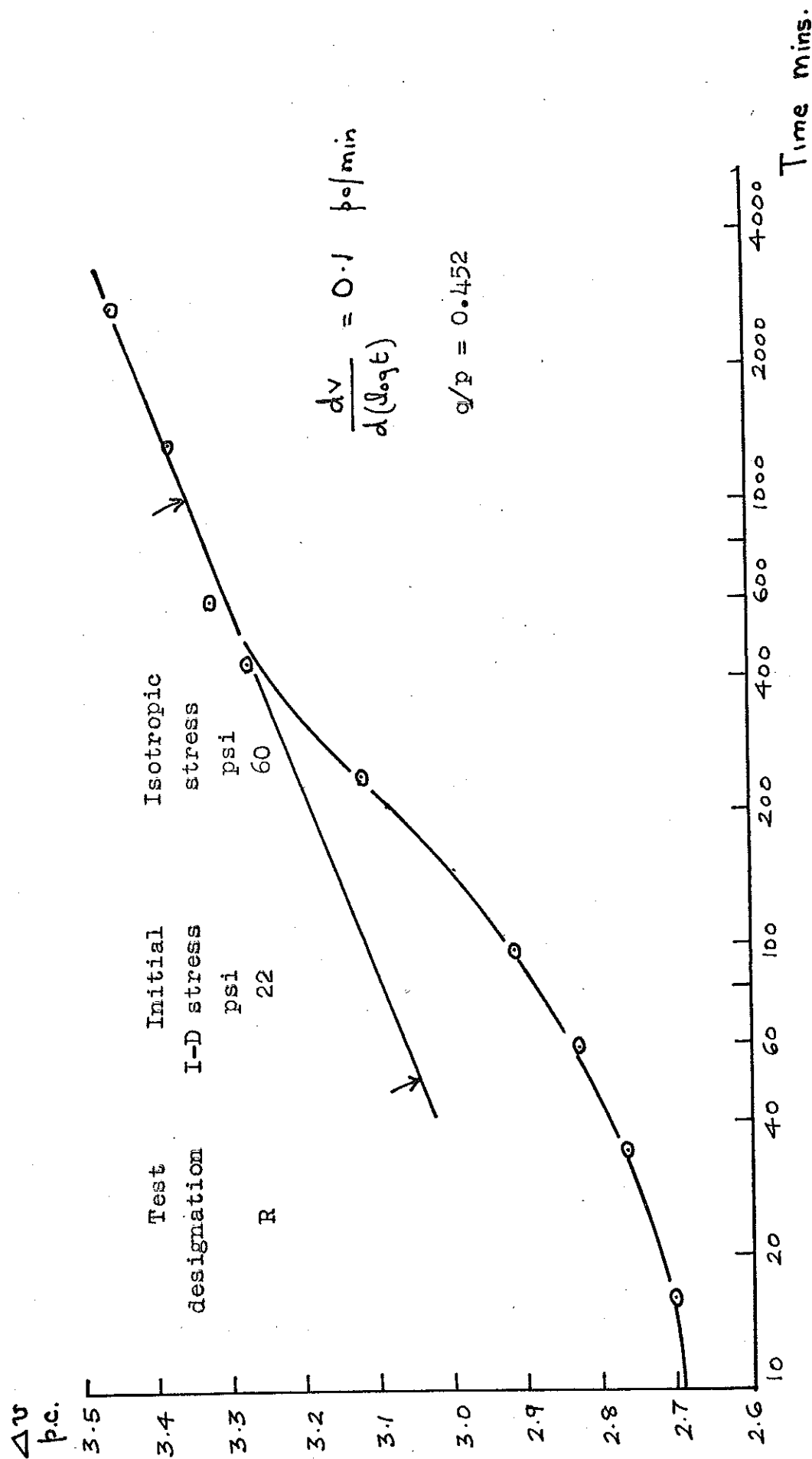
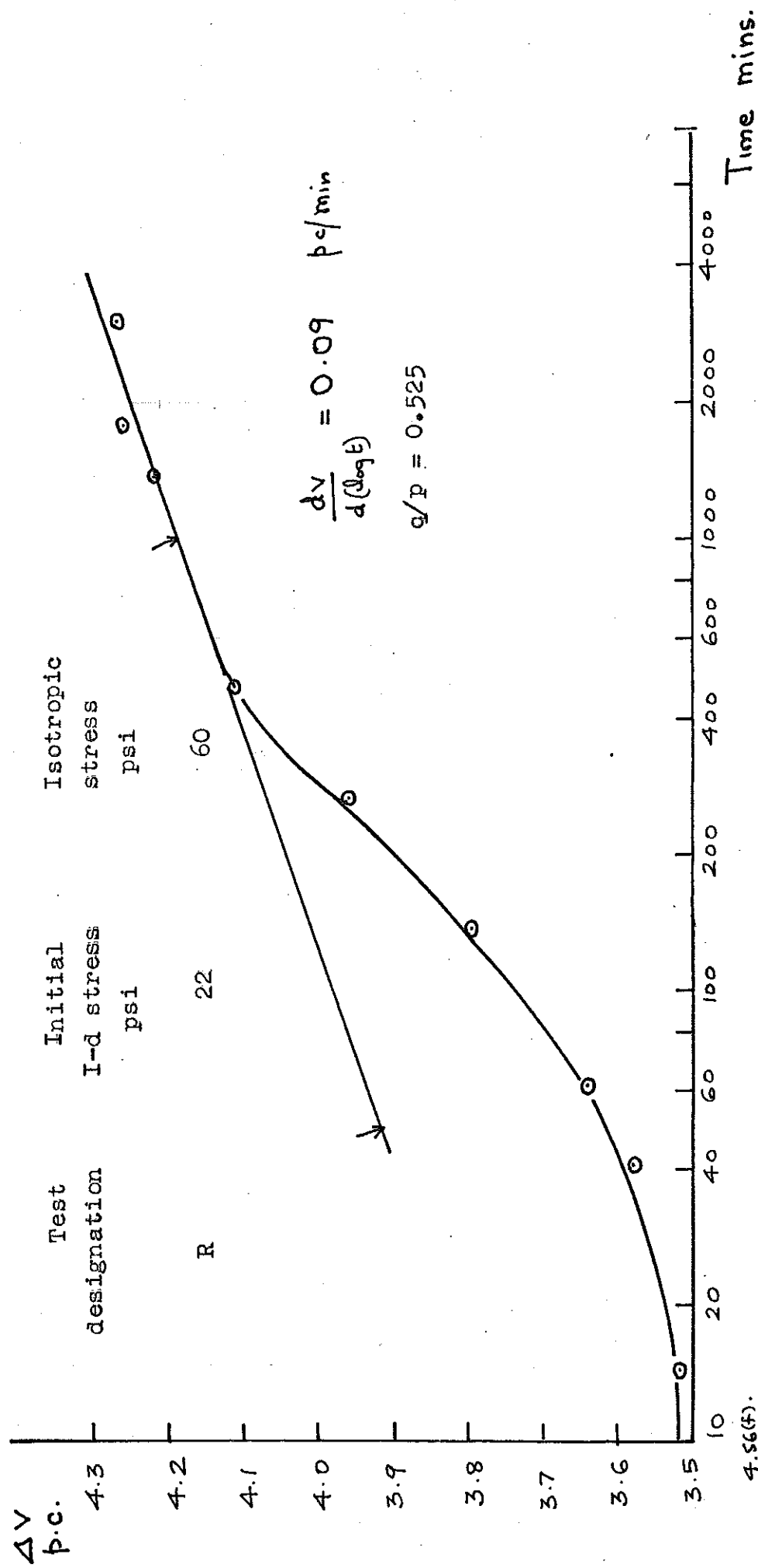
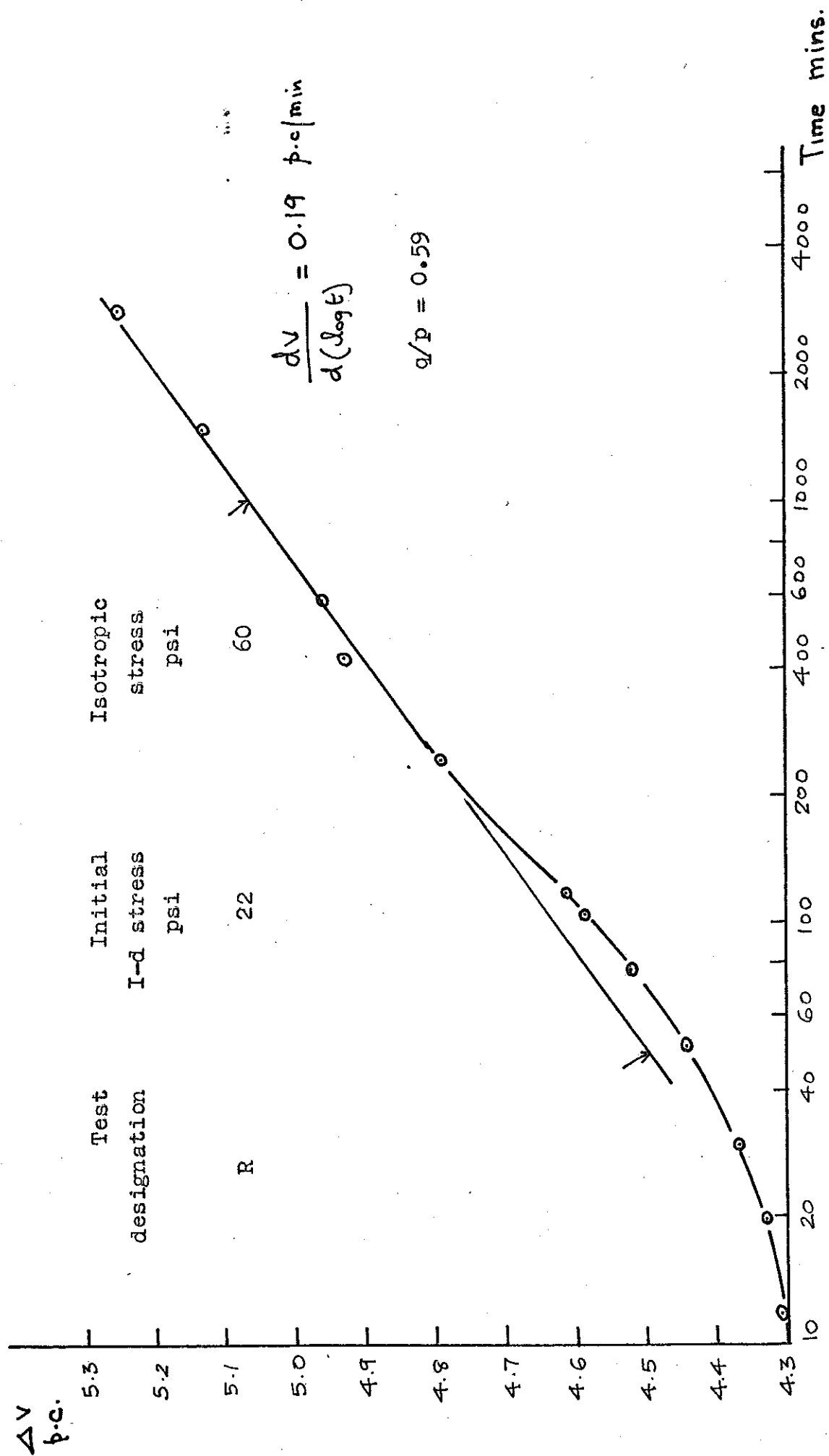


Fig. 4.56 (e) The $(\Delta v, t)$ characteristic of specimen R at a stress ratio of 0.452



4.56(t).

Fig. The $(\Delta v, t)$ characteristic of specimen R at a stress ratio of 0.525



4.5(9).
Fig. The $(\Delta v, t)$ characteristic of specimen R at a stress ratio of 0.59

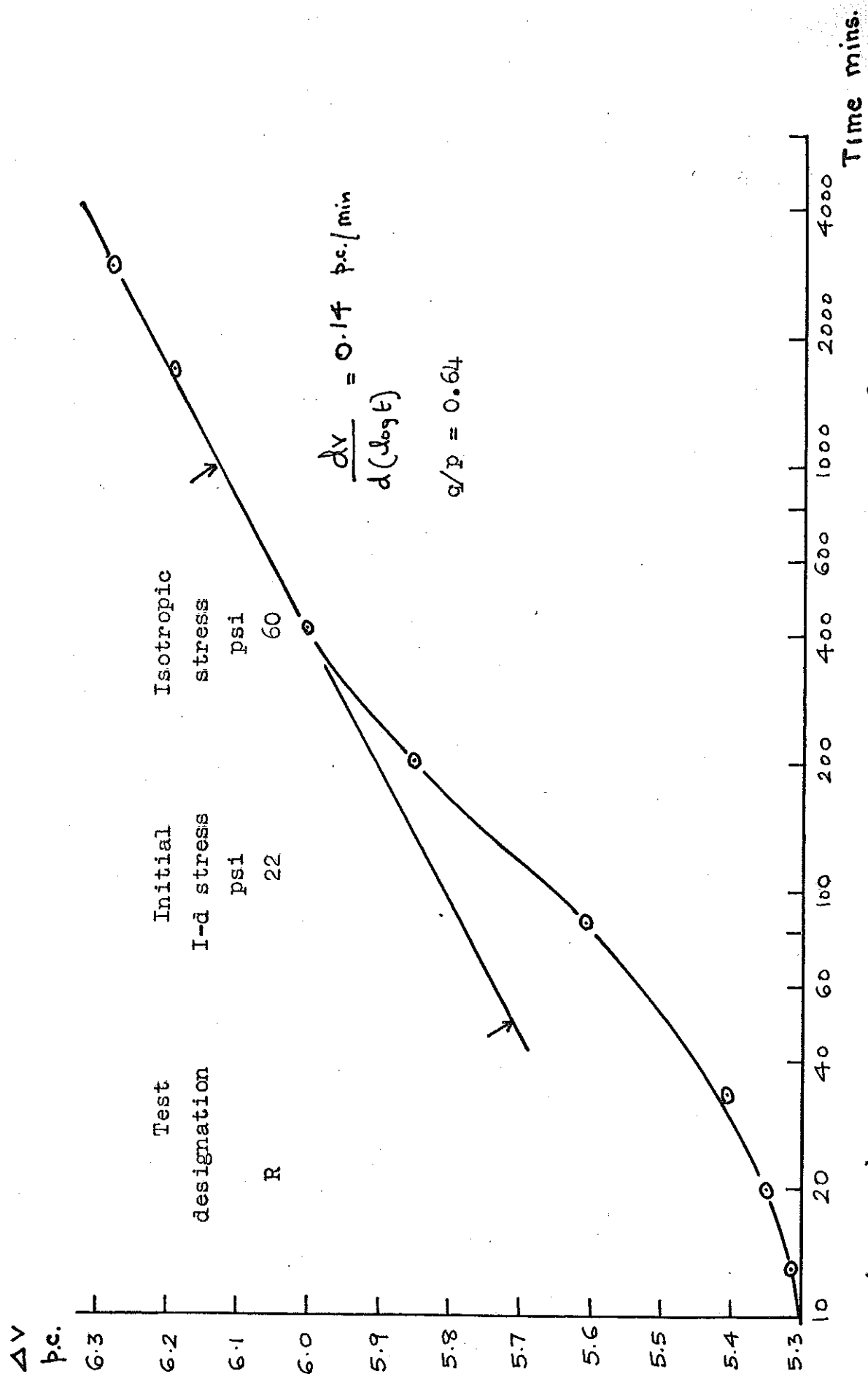


Fig. 4.56(h). The $(\Delta v, t)$ characteristic of specimen R at a stress ratio of 0.64

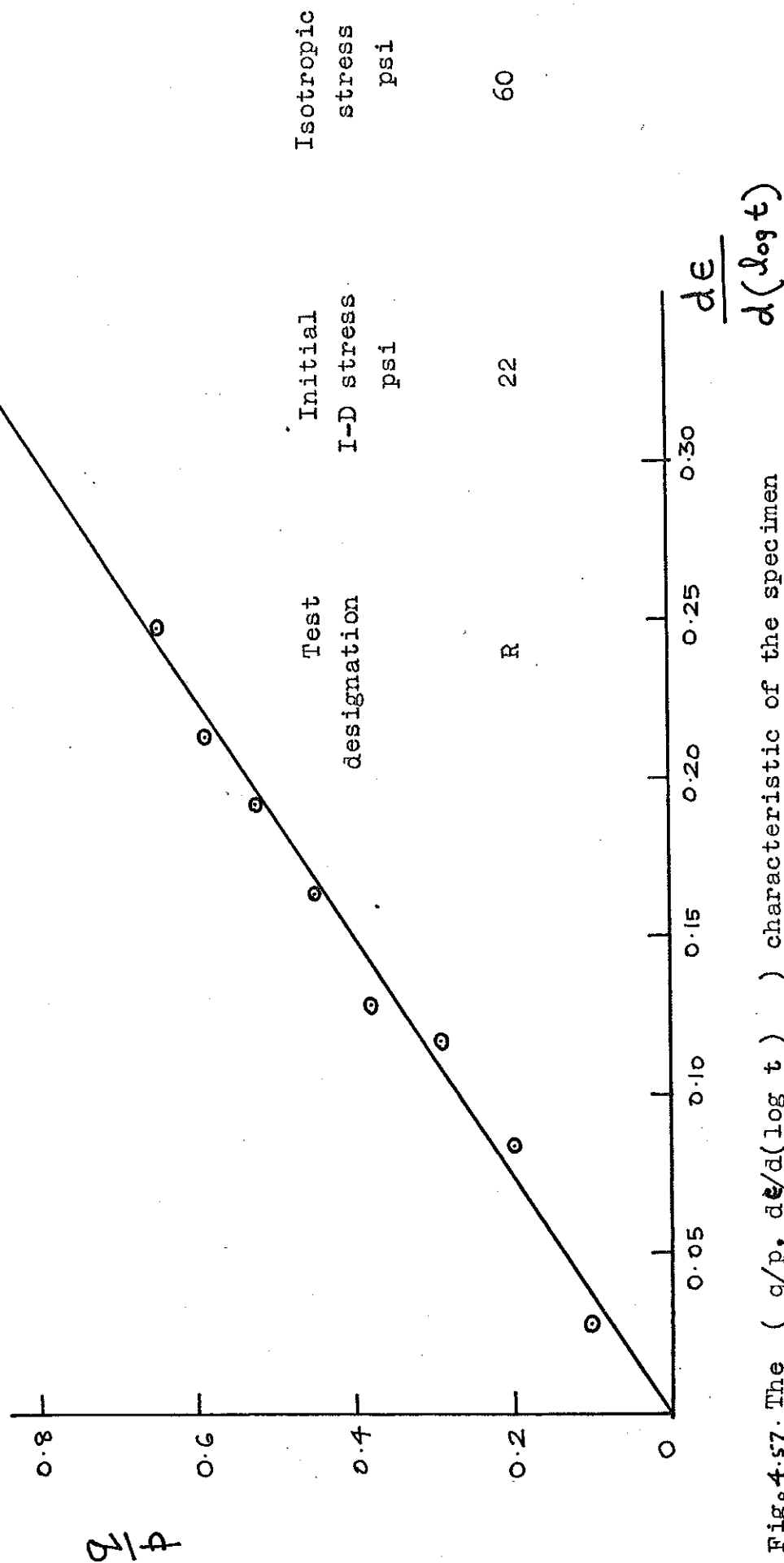


Fig. 4.57. The ($q/p, d\epsilon/d(\log t)$) characteristic of the specimen R sheared under fully drained condition.

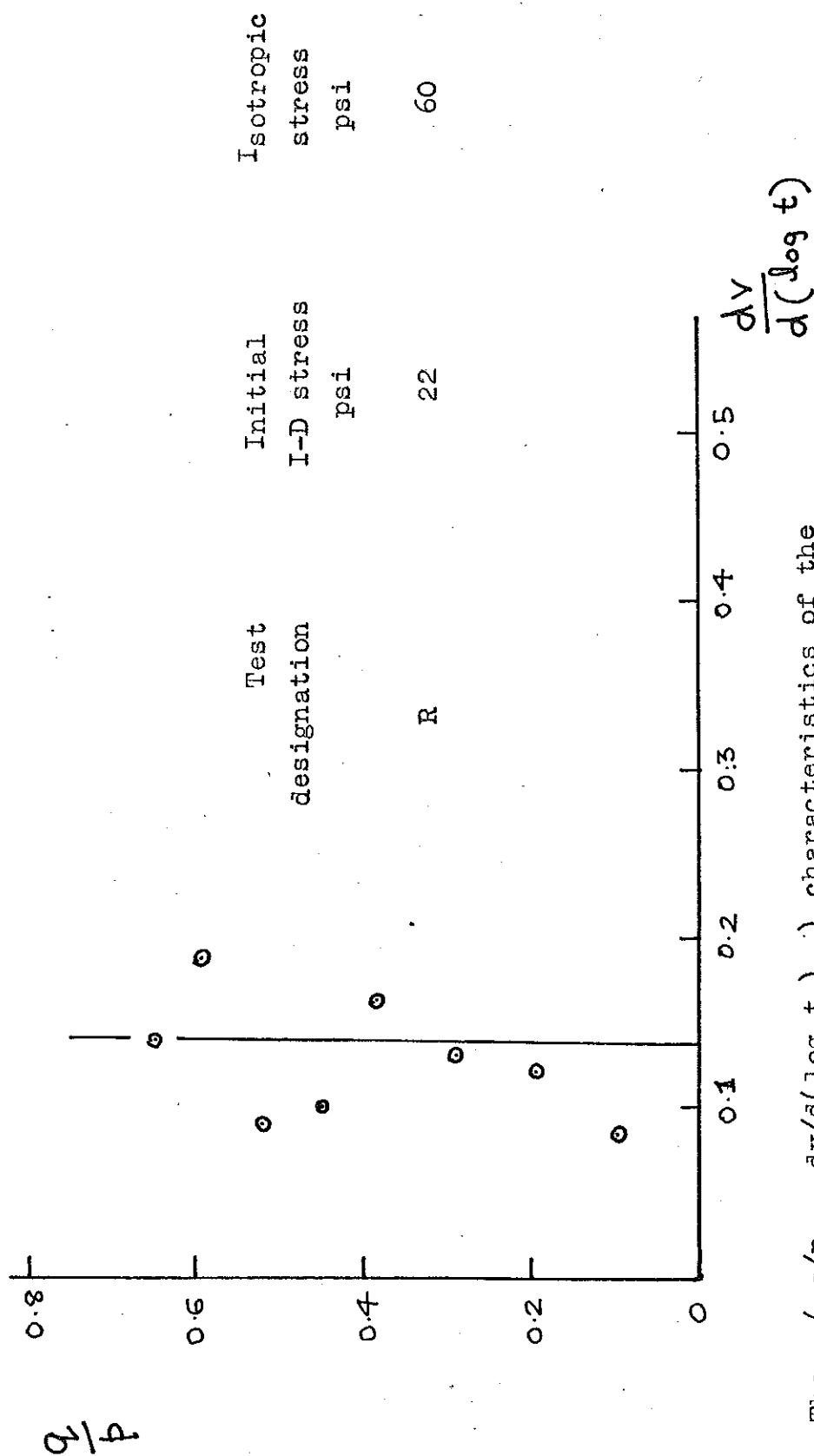


Fig. 4.58. The $(q/p, dv/d(\log t))$ characteristics of the specimen R sheared under fully drained condition.

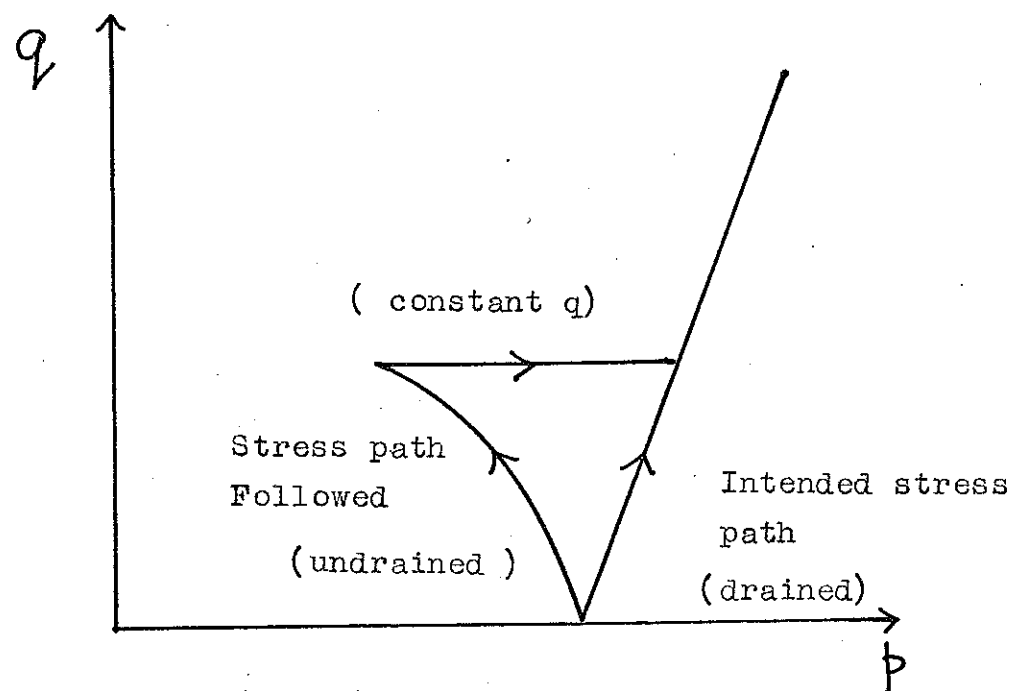


Fig. 4.59. The stress path followed by a specimen sheared under a large load increment.

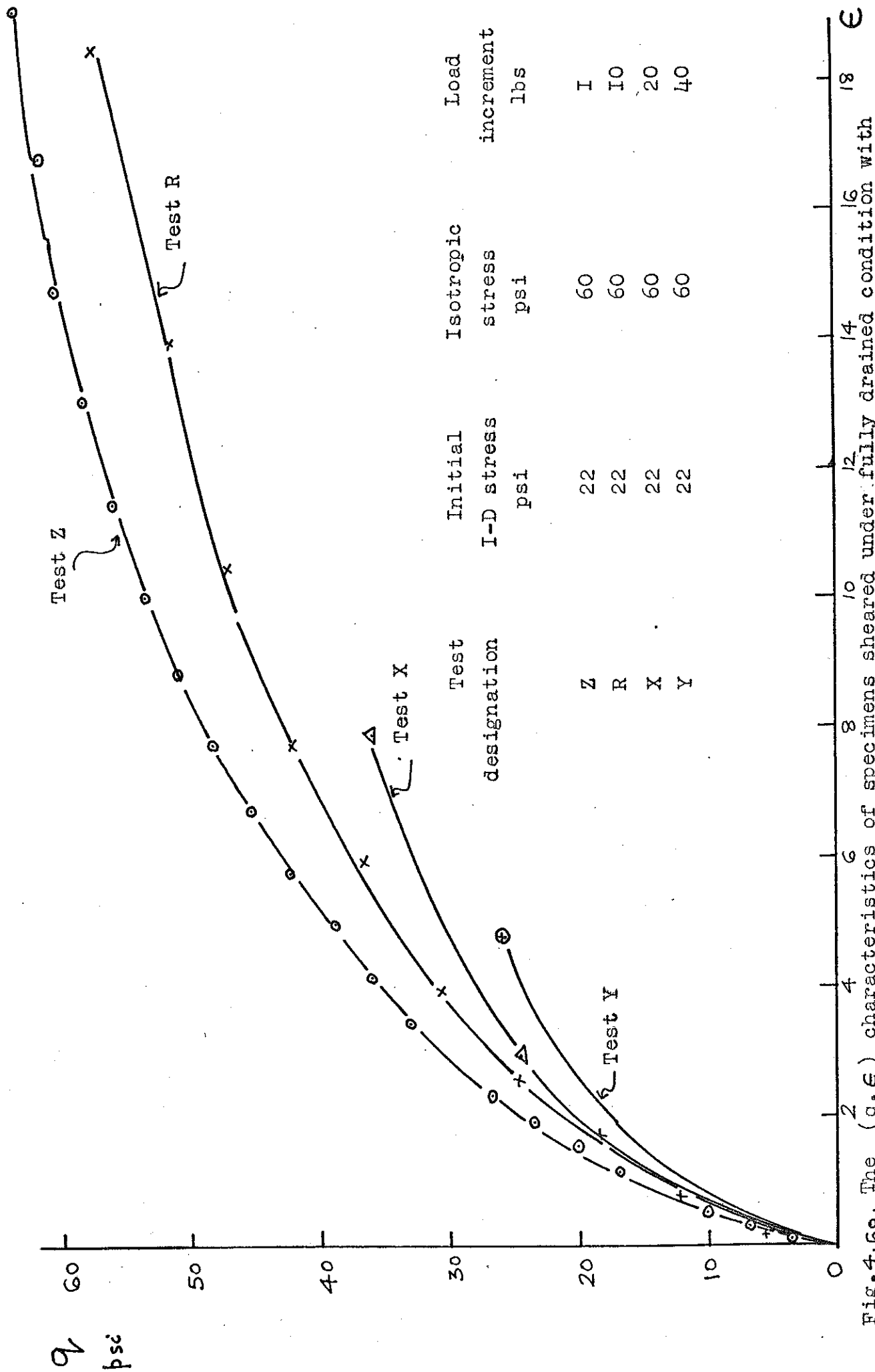


Fig. 4.60. The (q, E) characteristics of specimens sheared under fully drained condition with different load increment sizes.

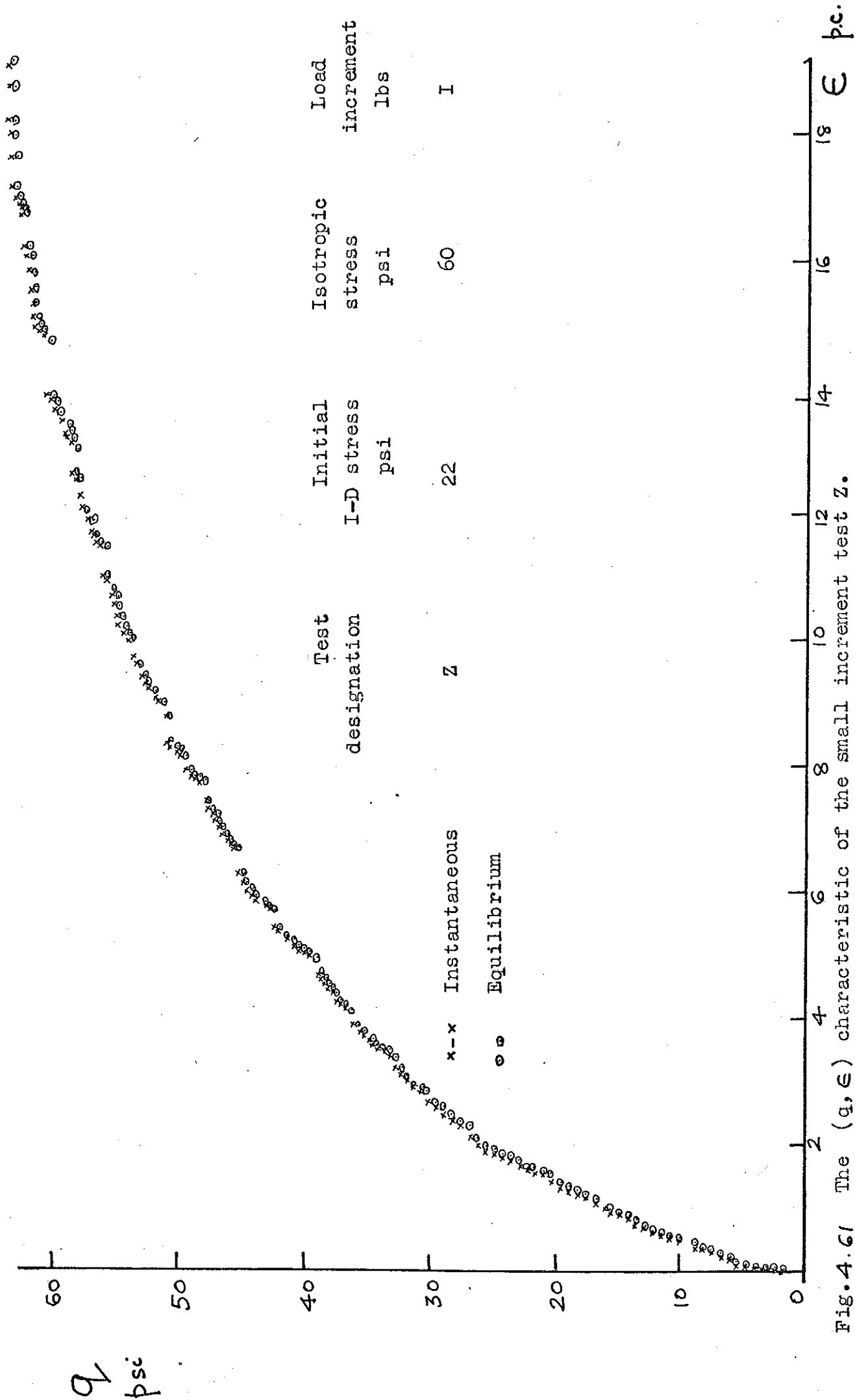
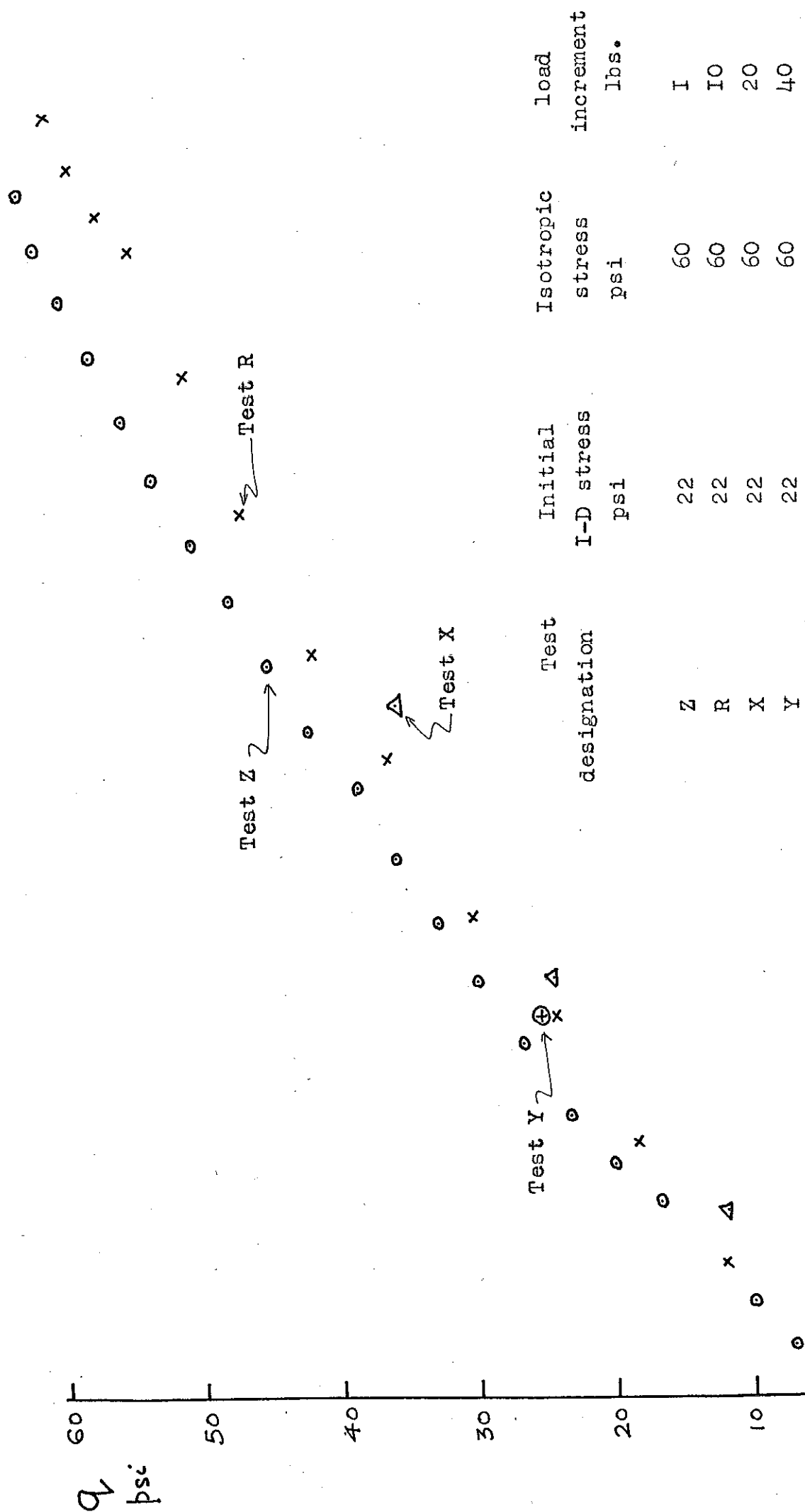


Fig. 4.61 The (q, ϵ) characteristic of the small increment test Z.



Test designation	Initial I-D stress psi	Isotropic stress psi	load increment lbs.
Z	22	60	1
R	22	60	10
X	22	60	20
Y	22	60	40

Fig. 4.6. The (q, v) characteristics of specimens sheared under fully drained condition with different load increment sizes.

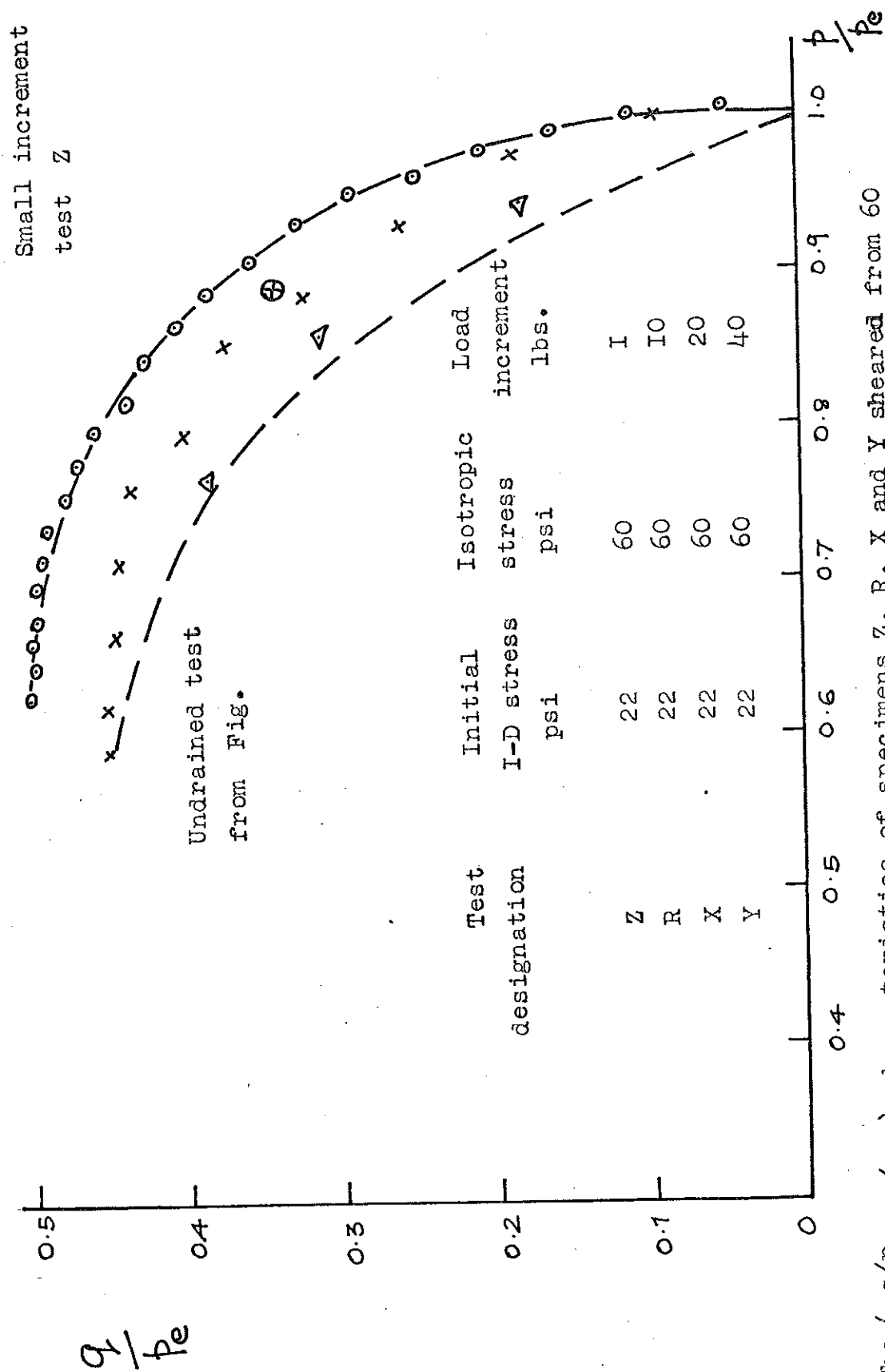


Fig. 4.63. The (q/p_e , p/p_e) characteristics of specimens Z, R, X and Y sheared from 60 psi isotropic stress under fully drained condition with load increments of I, IO, 20 and 40 lbs. respectively.

Test
designation

Initial
I-D stress
psi

Isotropic
stress
psi

Z

22

60

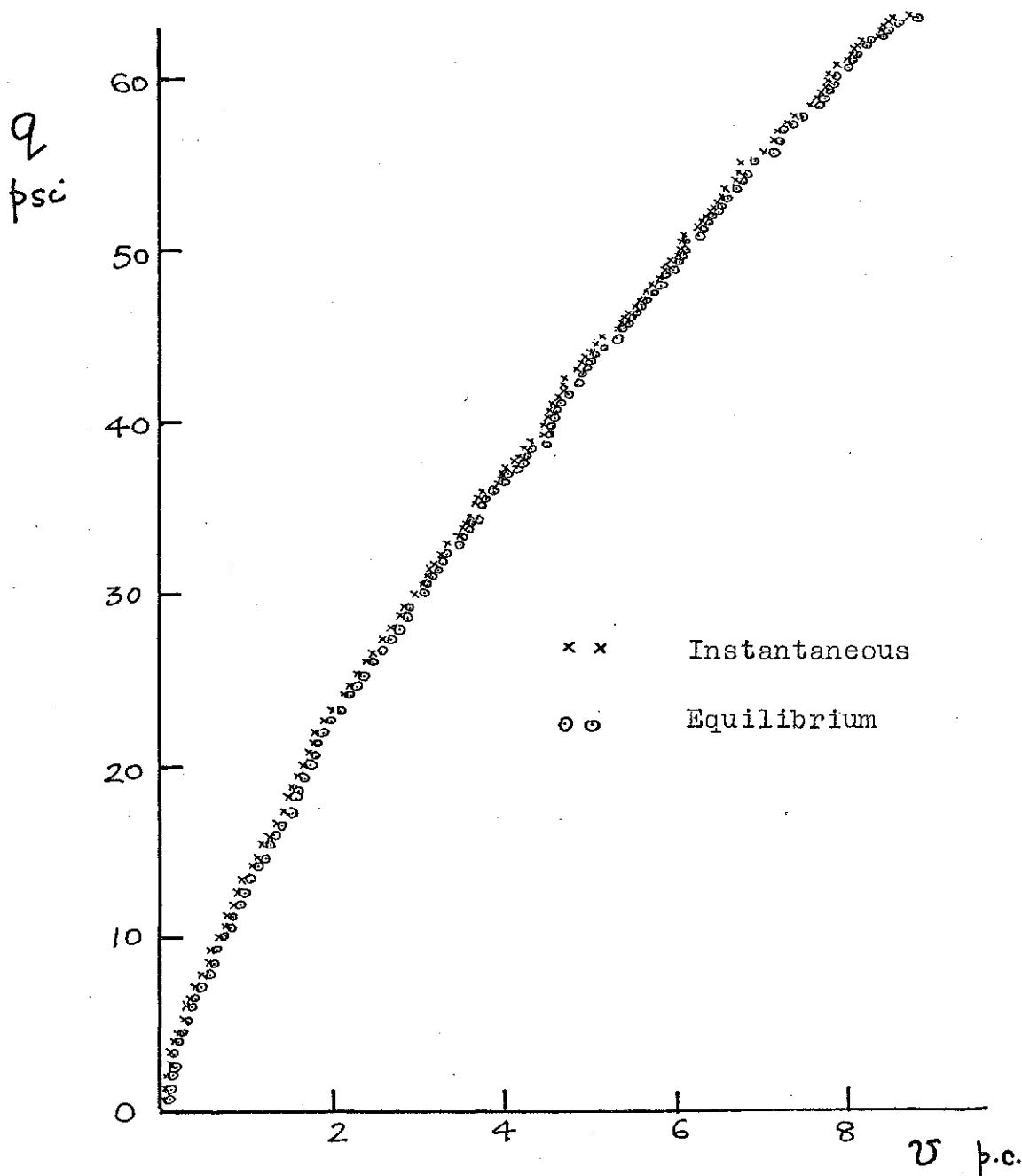


Fig.4.64. The (q, v) characteristic of the specimen Z sheared under fully drained condition with small load increments.

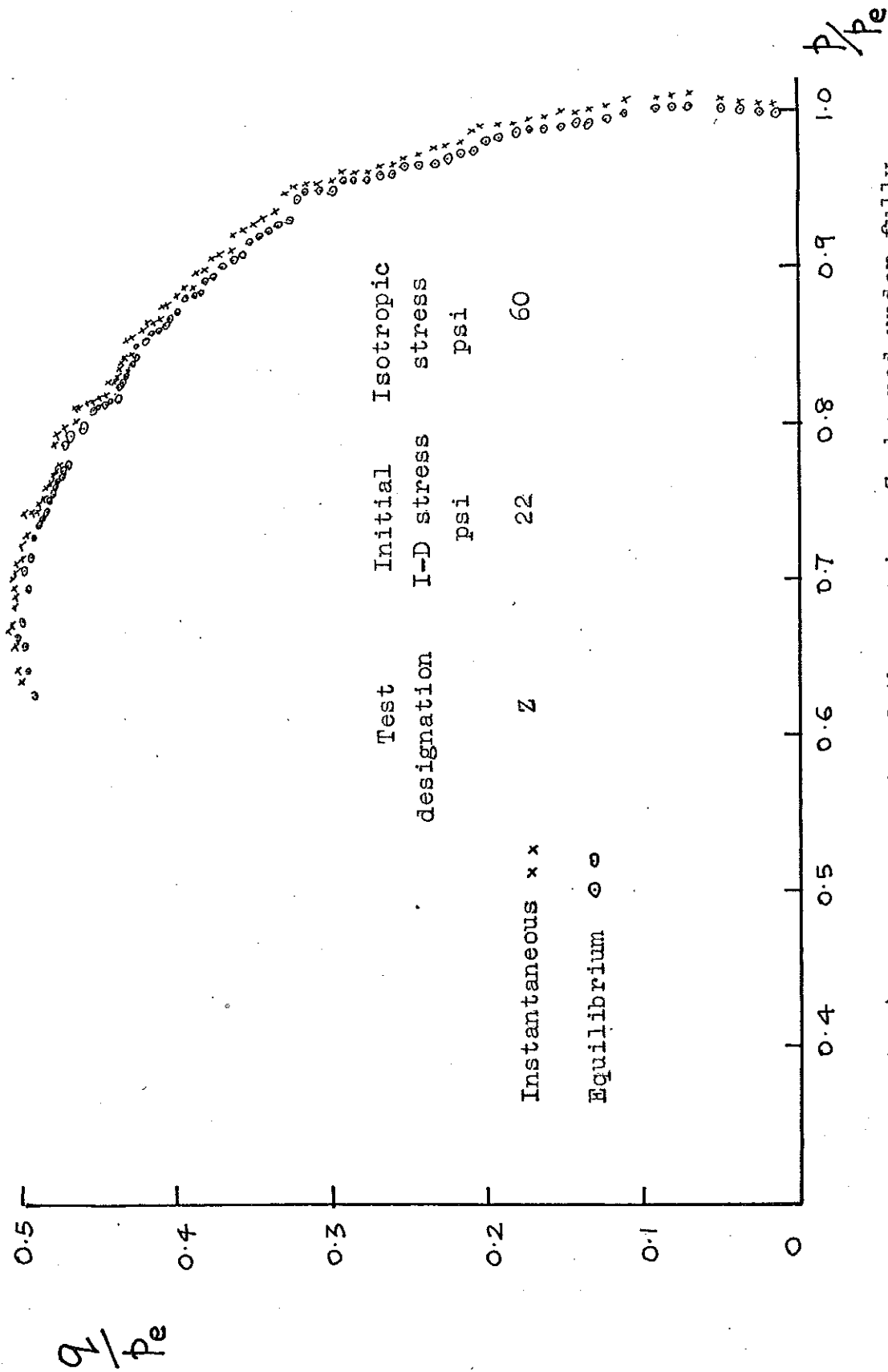


Fig. 4.65. The (q/p_e , p/p_e) characteristic of the specimen Z sheared under fully drained condition with small load increment

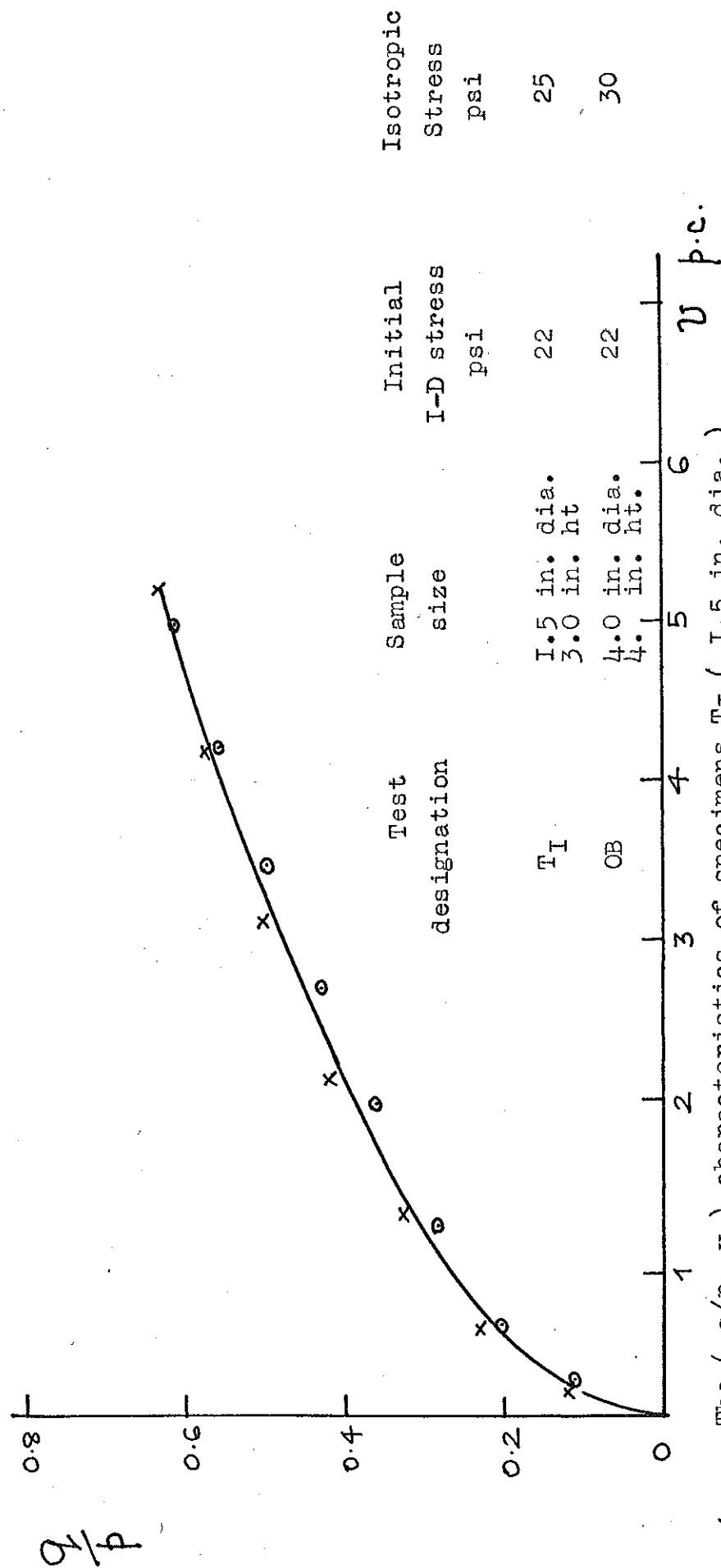


Fig. 4.66 The (q/p , v) characteristics of specimens TI (1.5 in. dia.) and OB (4.0 in. dia.) sheared under fully drained condition with constant-cell pressure.

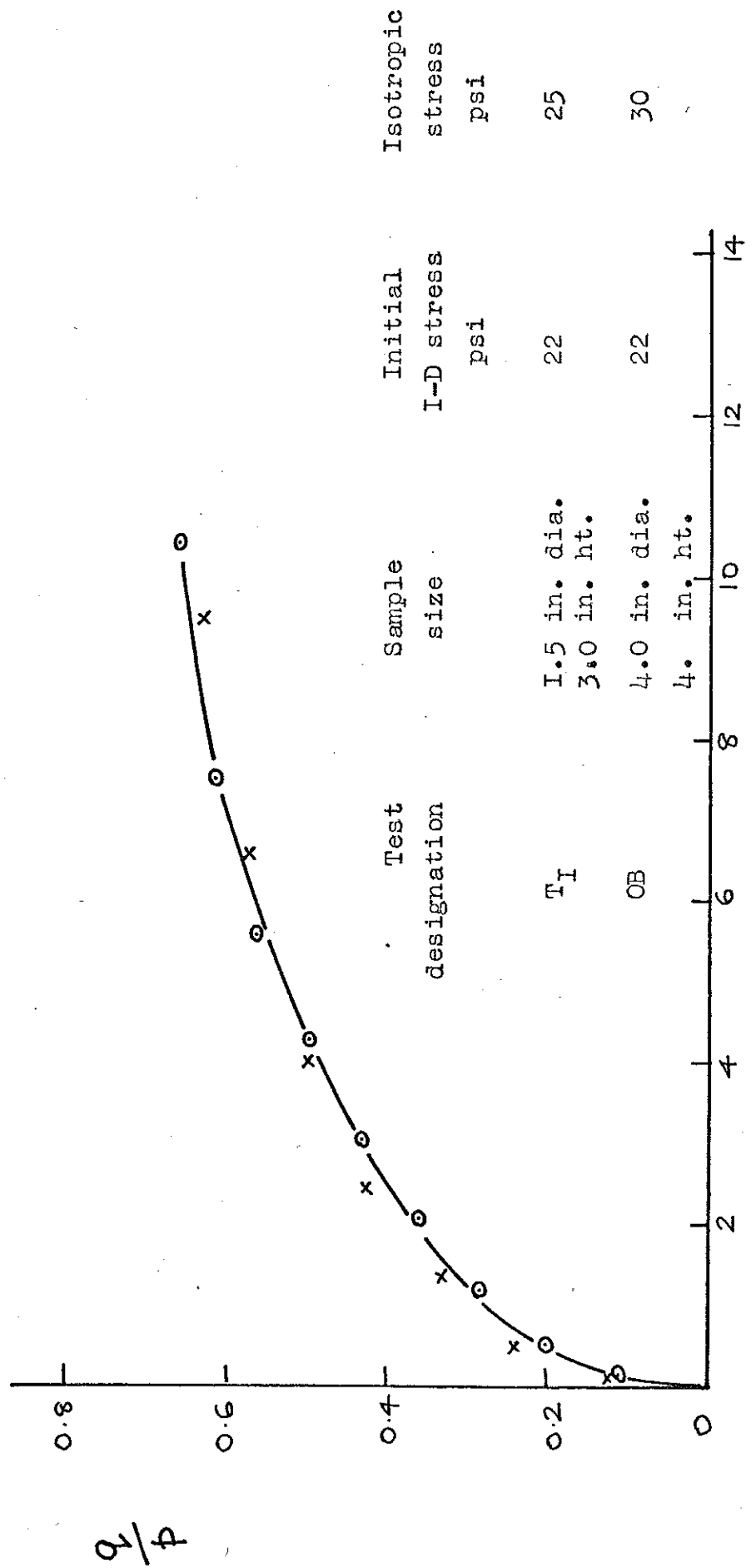


Fig. 4.67 The ($q/p, \epsilon$) characteristics of specimens T1 (1.5 in. dia.) and OB (4.0 in. dia.) sheared under fully drained condition with constant cell pressures. ϵ p.c.

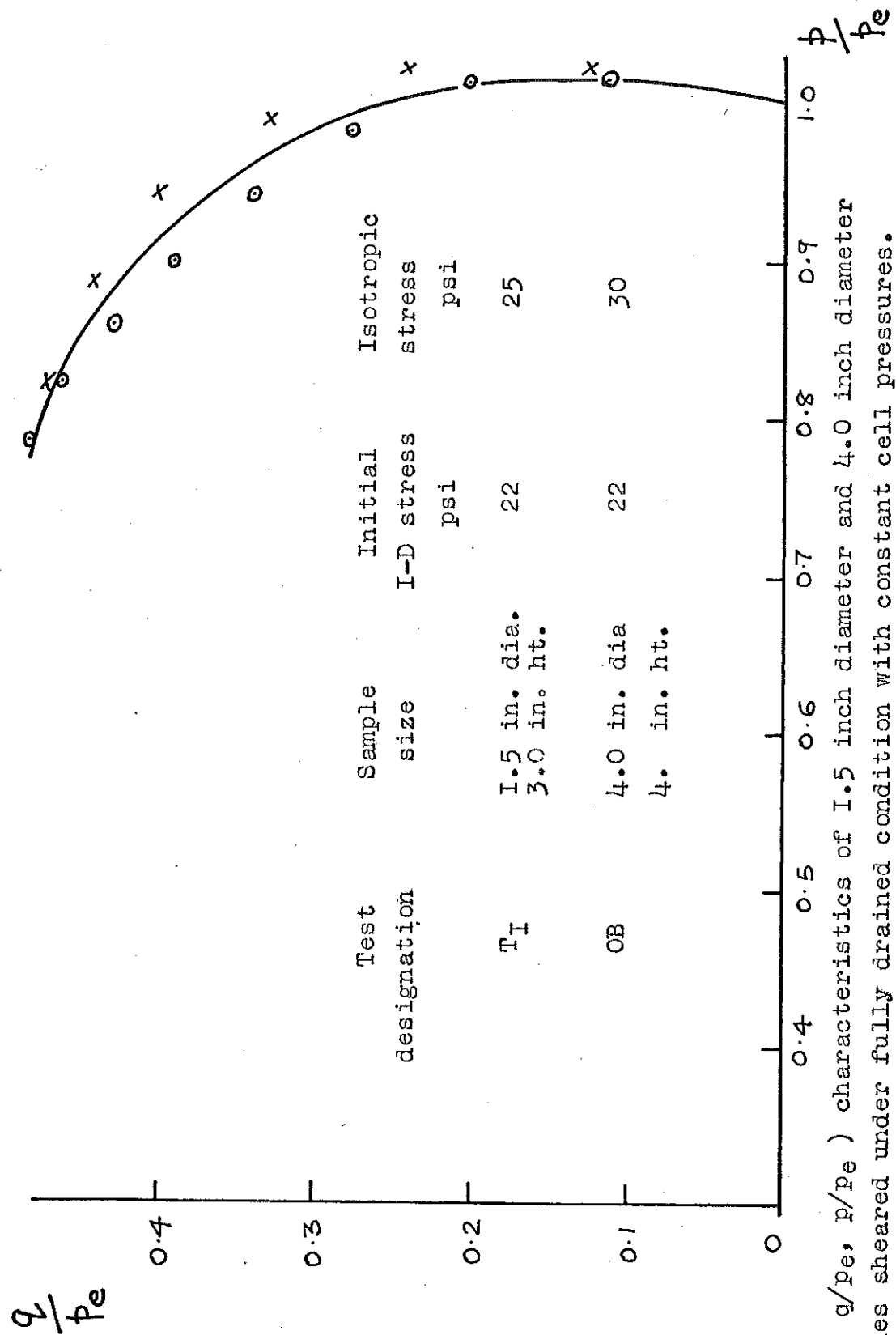


Fig. 4.68. The (q/p_e , p/p_e) characteristics of 1.5 inch diameter and 4.0 inch diameter samples sheared under fully drained condition with constant cell pressures.

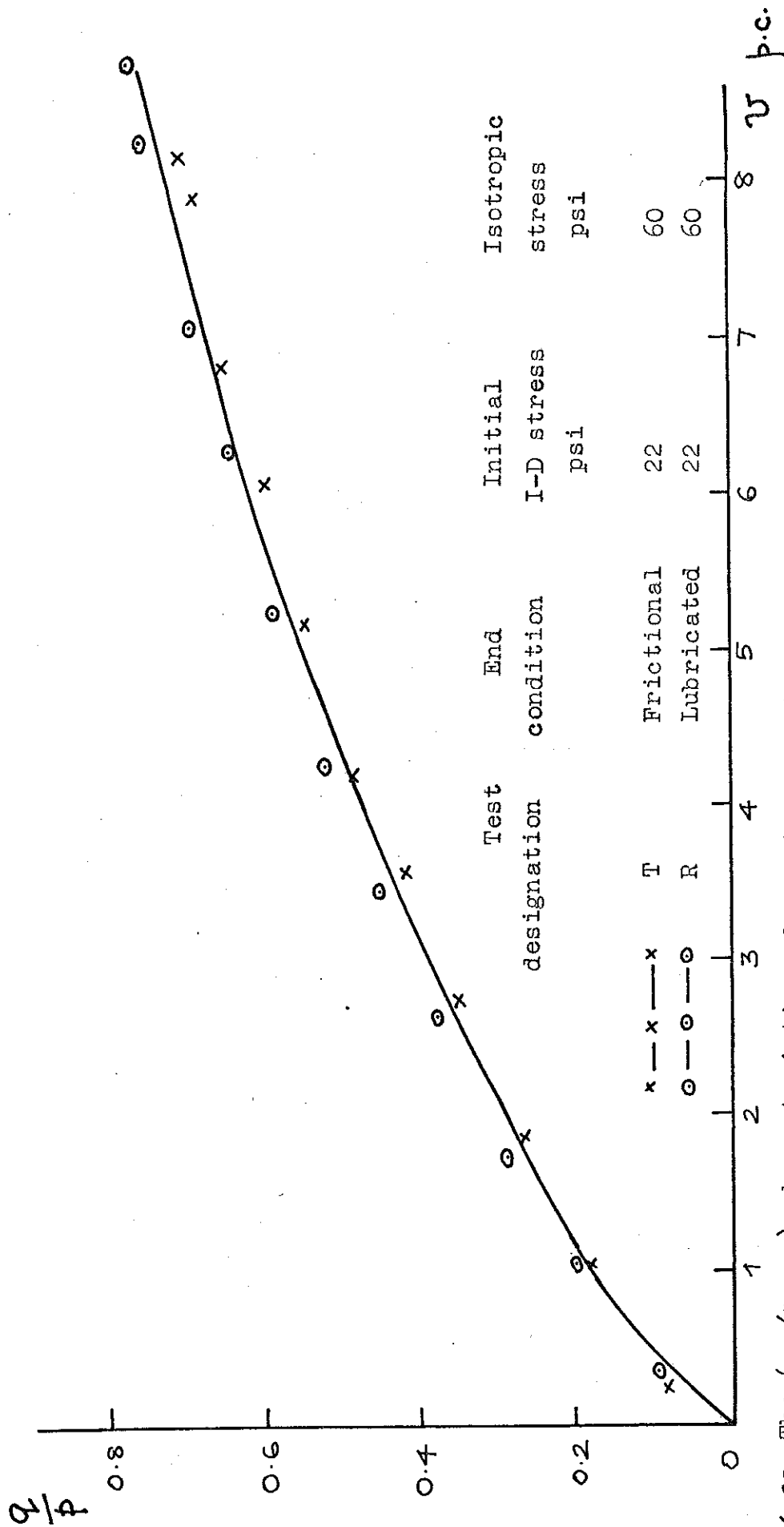


Fig. 4.69. The (q/p , v) characteristics of specimens contained between frictional and lubricated ends and sheared from an isotropic stress of 60 psi under fully drained condition with constant cell pressure.

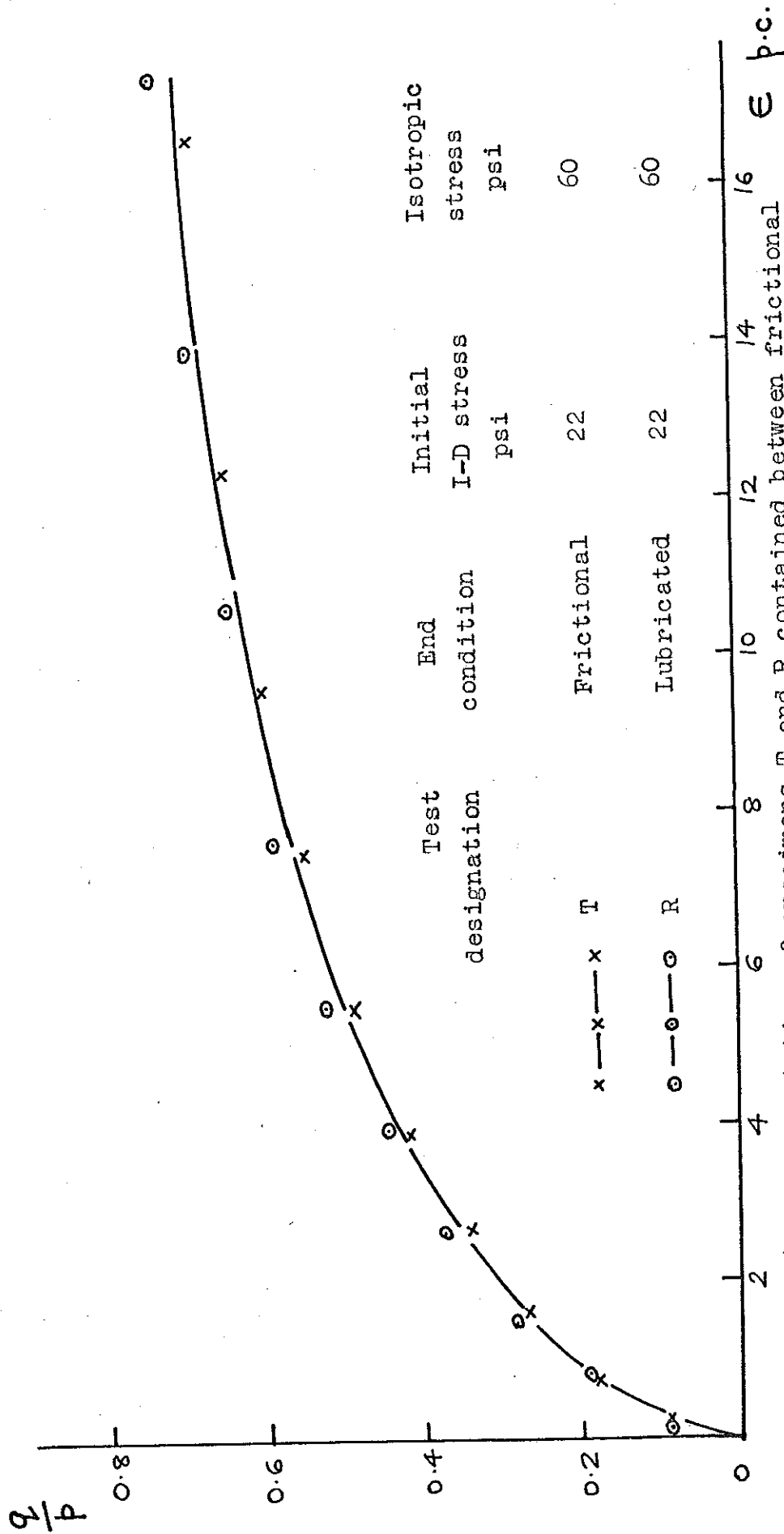


Fig. 4.70.

The ($q/p, \epsilon$) characteristics of specimens T and R contained between frictional and lubricated end and sheared from an isotropic stress of 60 psi under fully drained condition with constant cell pressure.

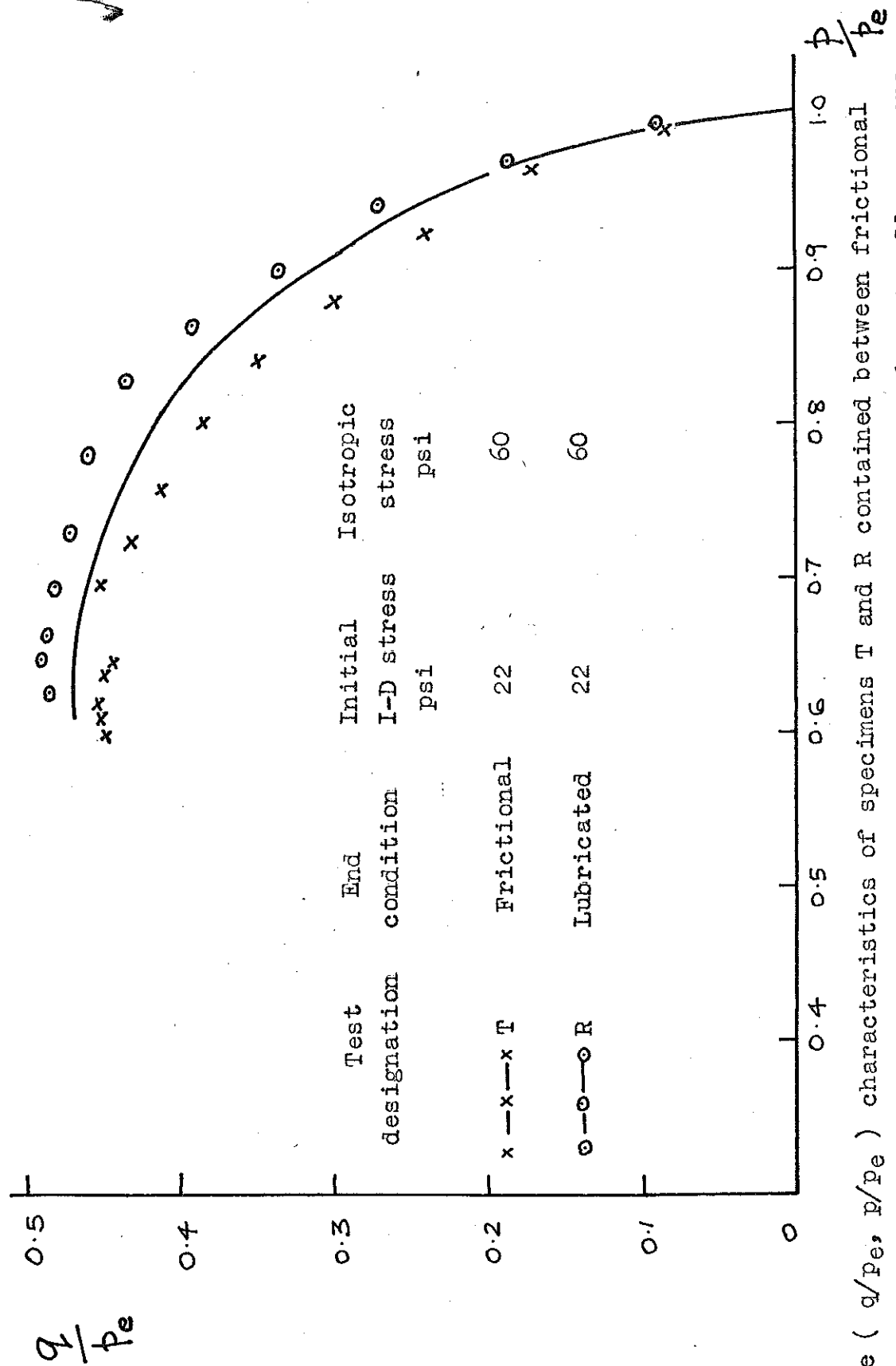


Fig. 4\71. The (q/p_e , p/p_e) characteristics of specimens T and R contained between frictional and lubricated ends and sheared under fully drained condition from 60 psi cell pressure.