



Afdelingen for Bærende Konstruktioner  
Department of Structural Engineering  
Danmarks Tekniske Højskole · Technical University of Denmark

Creep and Shrinkage of High-Strength  
Concrete; A testreport  
Appendix B

Henrik Elgaard Jensen

Serie R

No 291

1992

# **Creep and shrinkage of high-strength-concrete**

**A test report**

**APPENDIX B**

**Creep and Shrinkage of High-Strength Concrete; A testreport; Appendix  
B**

Copyright © by Henrik Elgaard Jensen, 1992

Tryk:

Afdelingen for Bærende Konstruktioner

Danmarks Tekniske Højskole

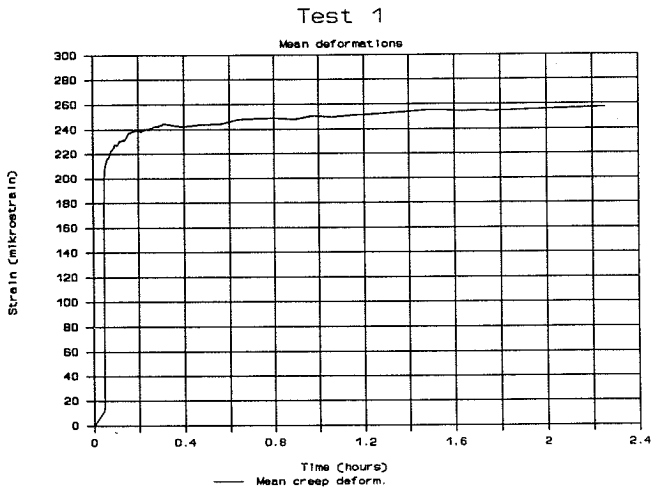
Lyngby

ISBN 87-7740-111-5

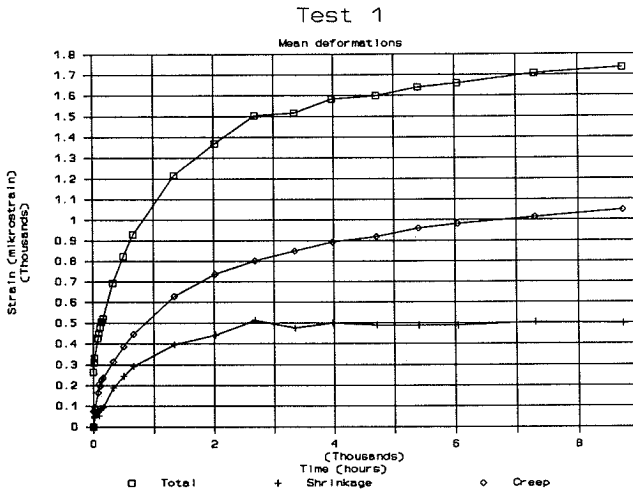
## TABLE OF CONTENTS

Figures for test 900911-1	B.1 - B.3
Figures for test 900913-2	B.4 - B.6
Figures for test 901022-3	B.7 - B.9
Figures for test 901024-4	B.10 - B.12
Figures for test 901029-5	B.13 - B.15
Figures for test 901031-6	B.16 - B.18
Figures for test 901105-7	B.19 - B.21
Figures for test 901107-8	B.22 - B.24
Figures for test 901112-9	B.25 - B.27
Figures for test 901210-11	B.28 - B.30
Figures for test 901212-12	B.31 - B.33
Figures for test 901217-13	B.34 - B.36
Figures for test 910109-16	B.37 - B.39
Figures for test 910114-17	B.40 - B.42
Figures for test 910121-19	B.43 - B.45
Figures for test 910123-20	B.46 - B.48
Figures for test 910128-21	B.49 - B.51
Figures for test 910130-22	B.52 - B.54
Figures for test 910206-24	B.55 - B.57
Figures for test 910211-25	B.58 - B.60
Figures for test 910213-26	B.61 - B.63
Figures for test 910305-27	B.64 - B.67
Figures for test 910306-28	B.68 - B.71
Figures for test 910311-29	B.72 - B.74
Figures for test 910403-30	B.75 - B.77
Figures for test 910408-31	B.78 - B.80
Figures for test 910410-32	B.81 - B.83
Figures for test 910415-33	B.84 - B.86
Figures for test 910502-38	B.87 - B.89
Figures for test 910507-39	B.90 - B.92

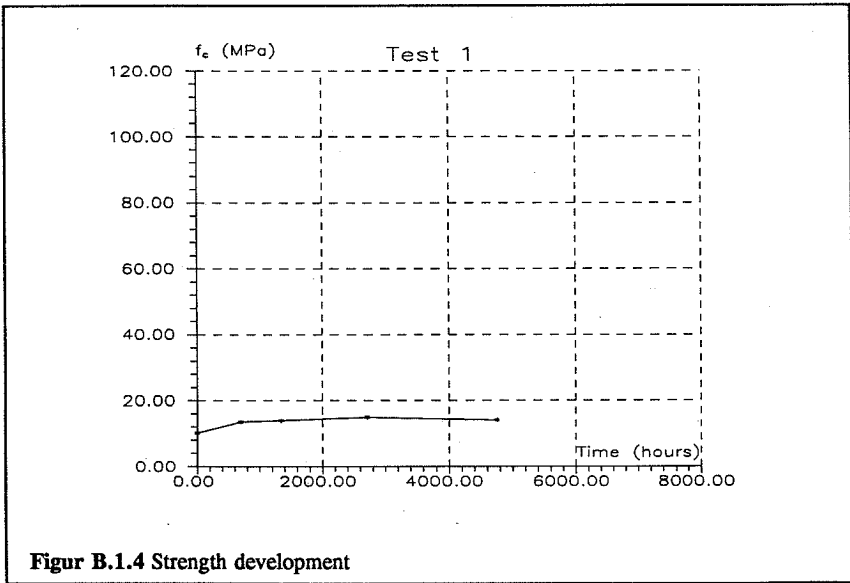
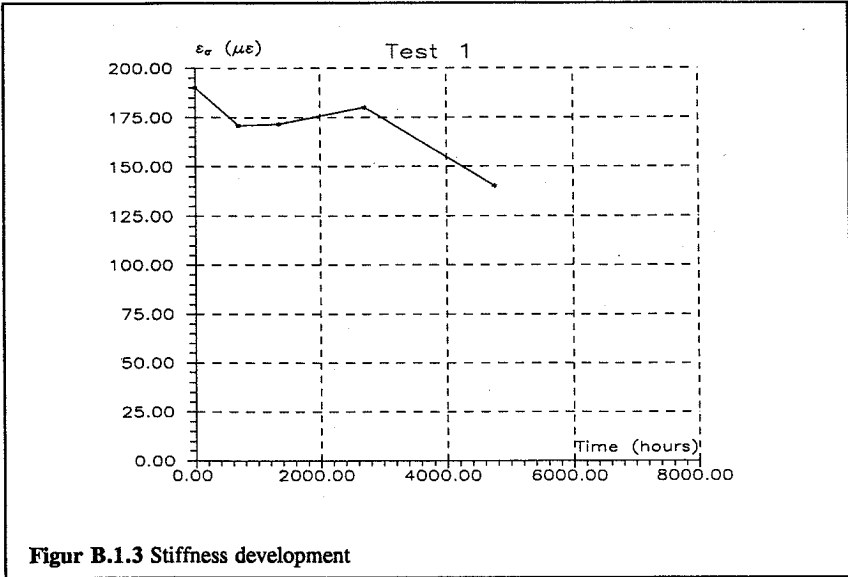


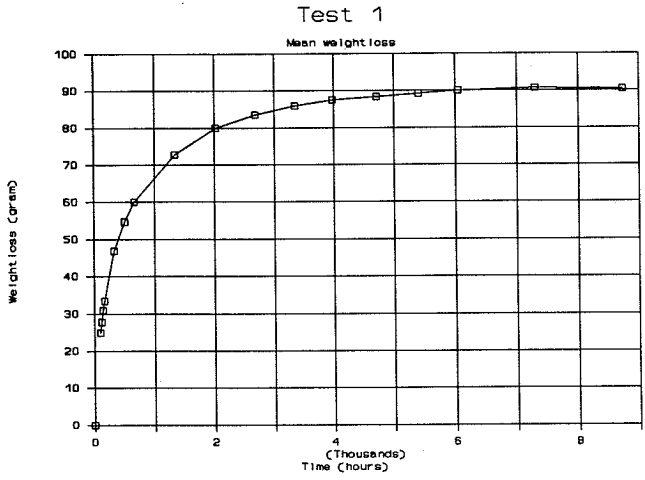


**Figure B.1.1 Mean deformation (short-time)**



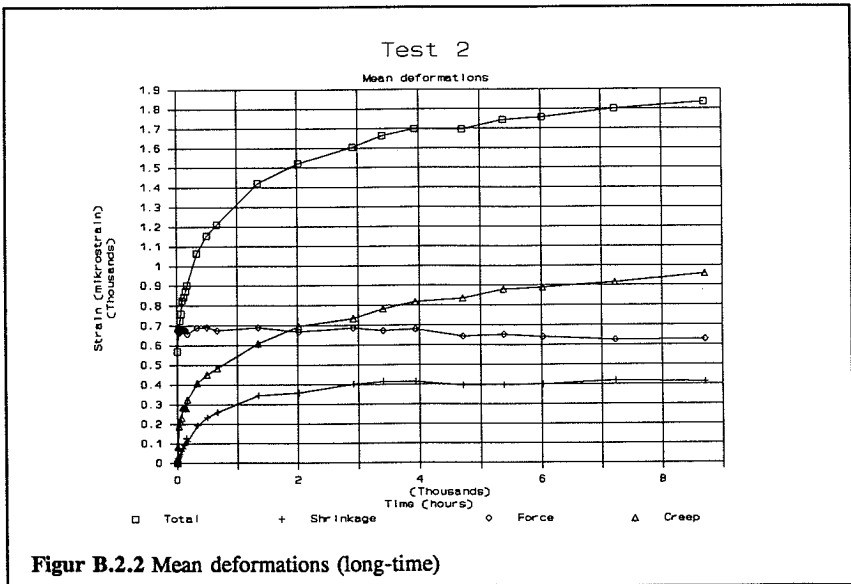
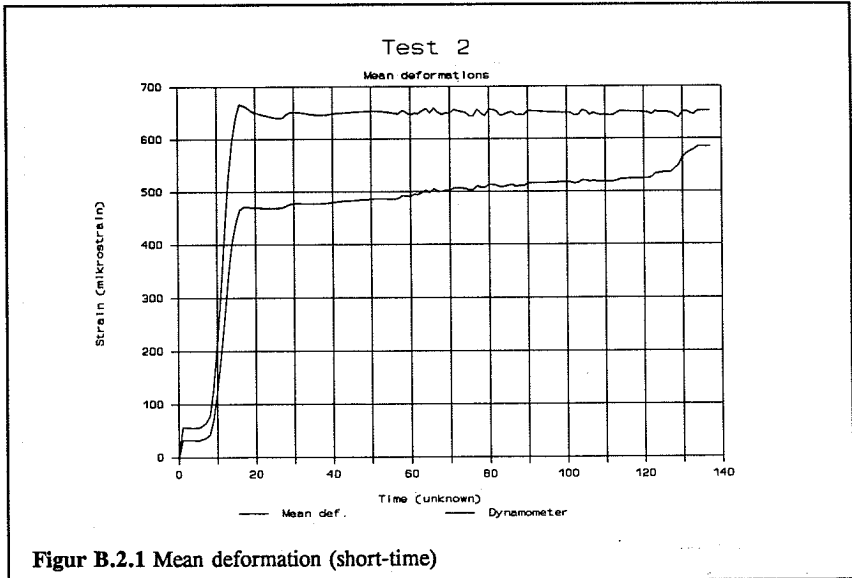
**Figure B.1.2 Mean deformations (long-time)**

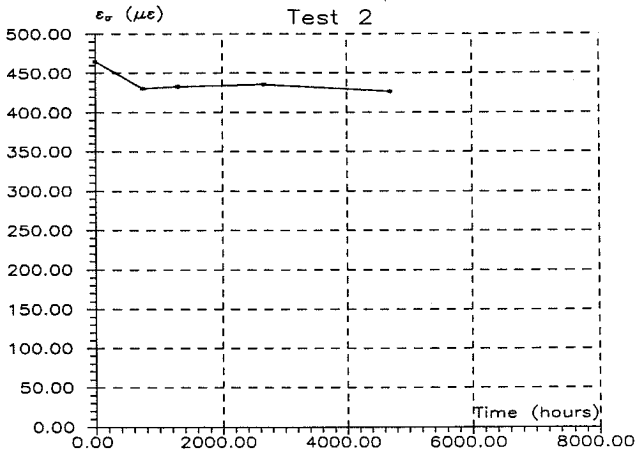




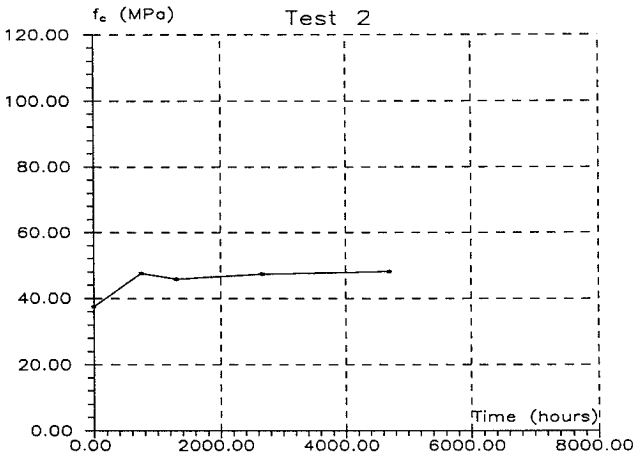
**Figur B.1.5 Mean weightloss of shrinkage specimens (long-time)**



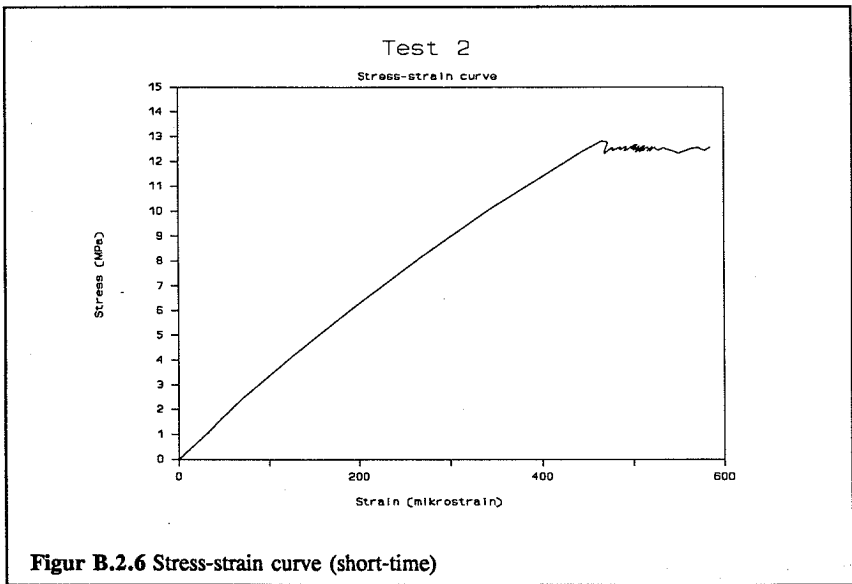
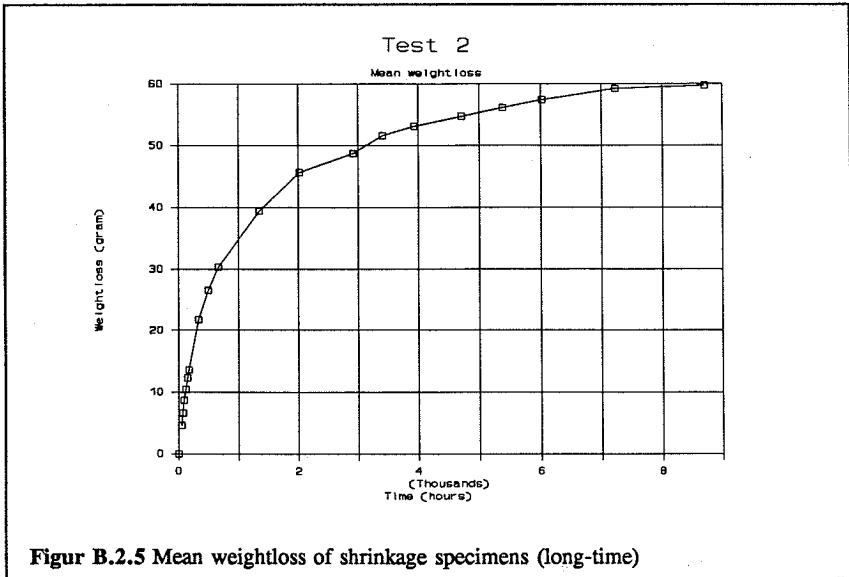


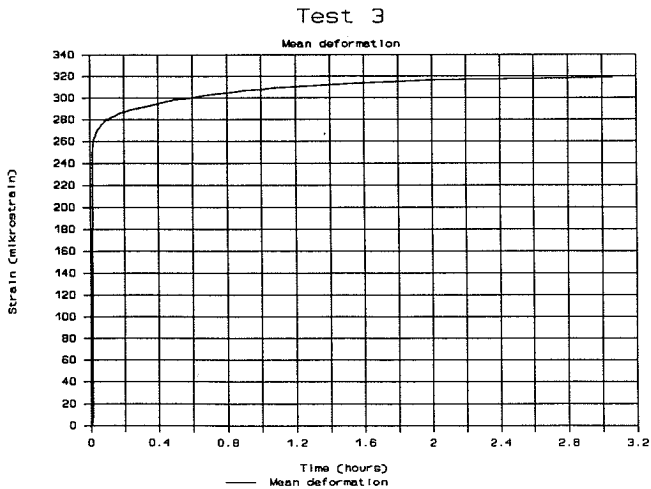


**Figur B.2.3 Stiffness development**

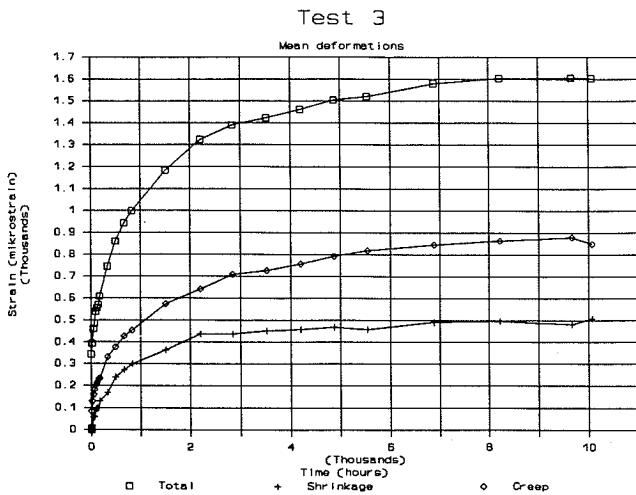


**Figur B.2.4 Strength development**

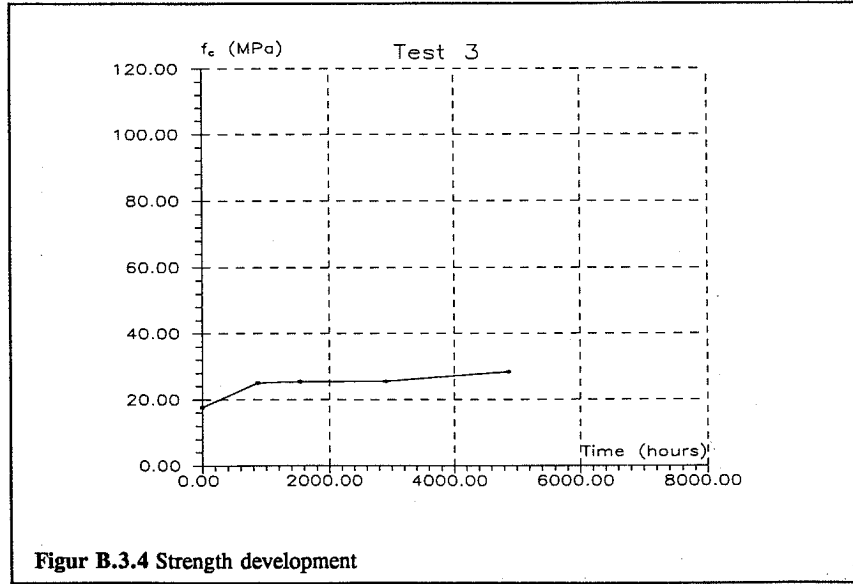
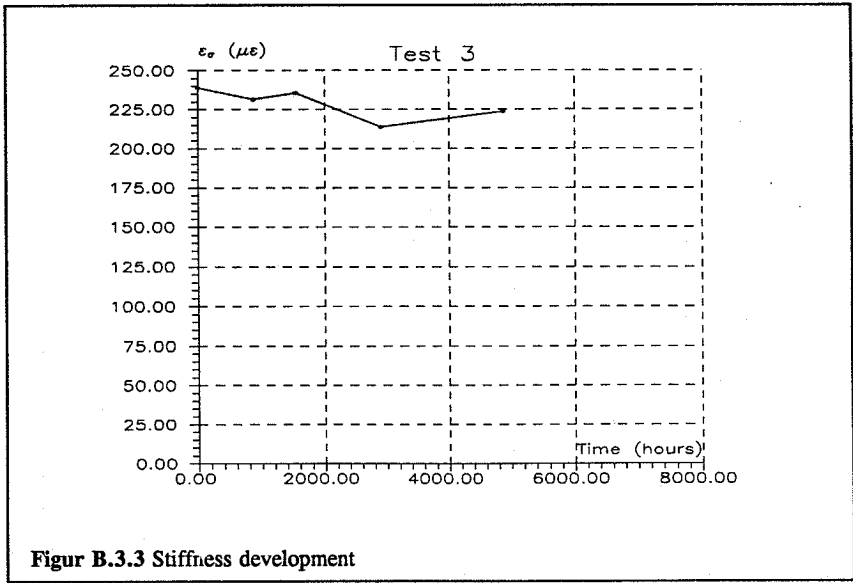


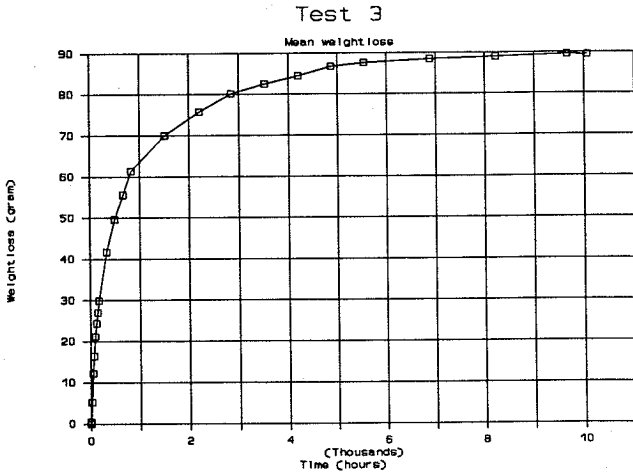


**Figur B.3.1** Mean deformation (short-time)

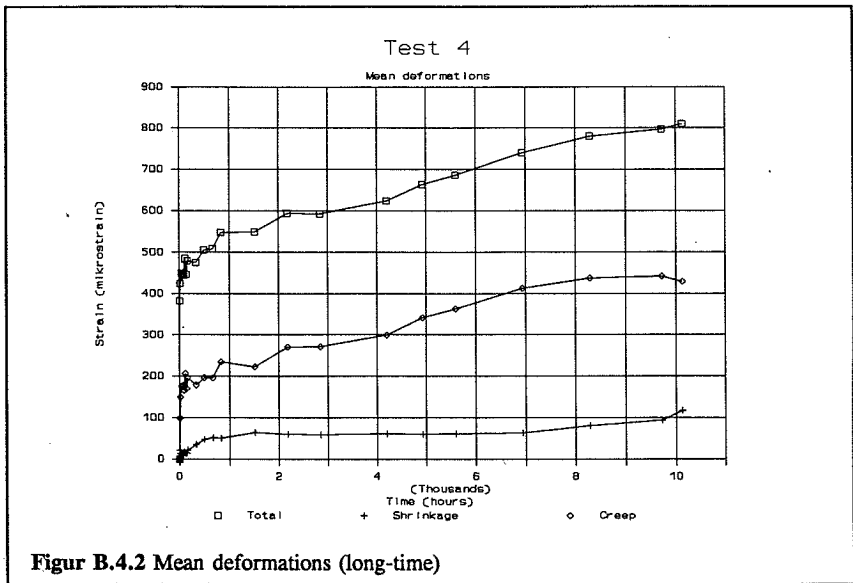
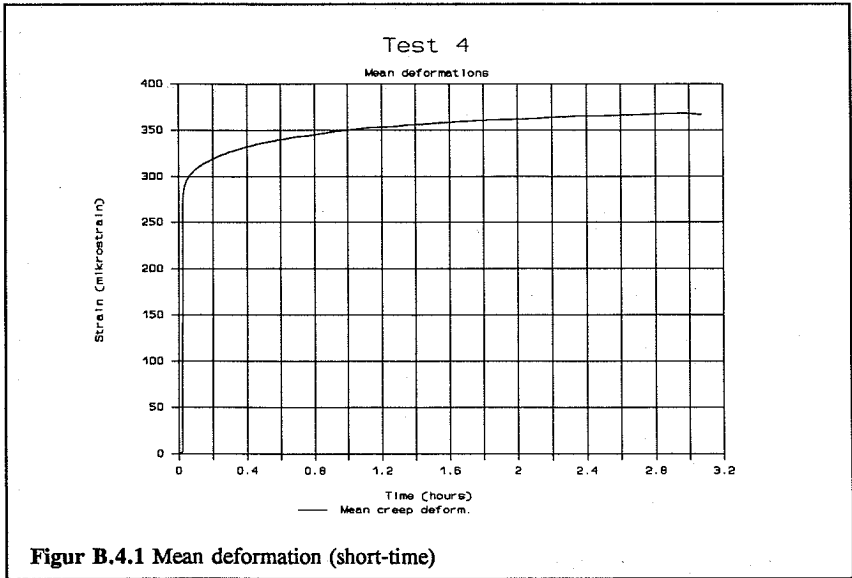


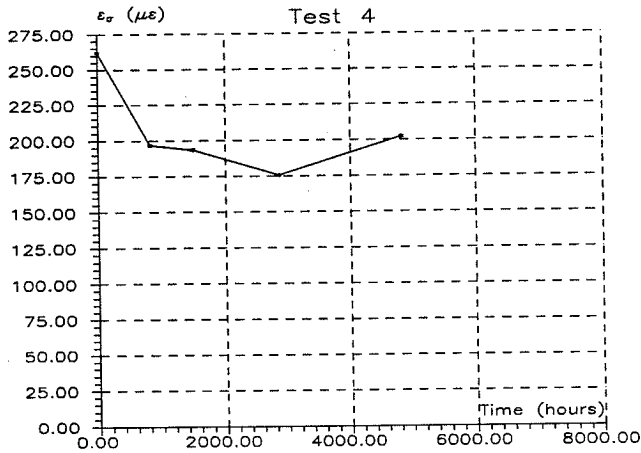
**Figur B.3.2** Mean deformations (long-time)



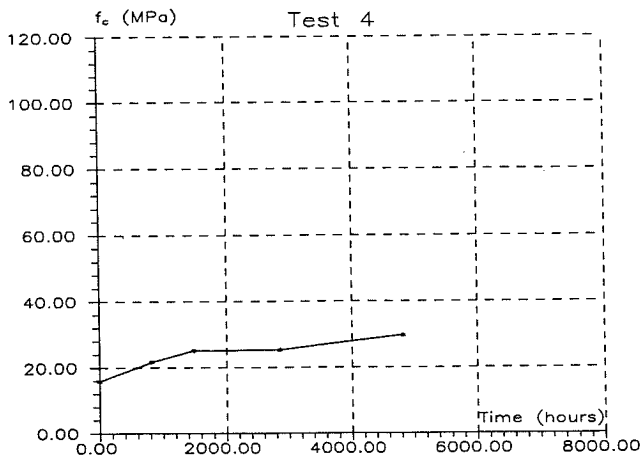


**Figur B.3.5 Mean weightloss of shrinkage specimens (long-time)**



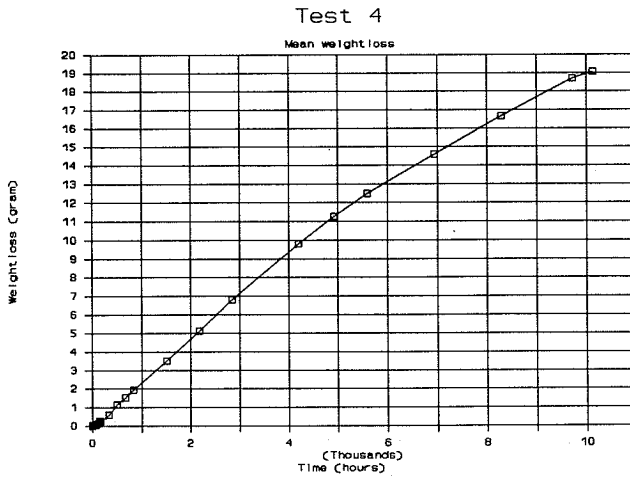


Figur B.4.3 Stiffness development

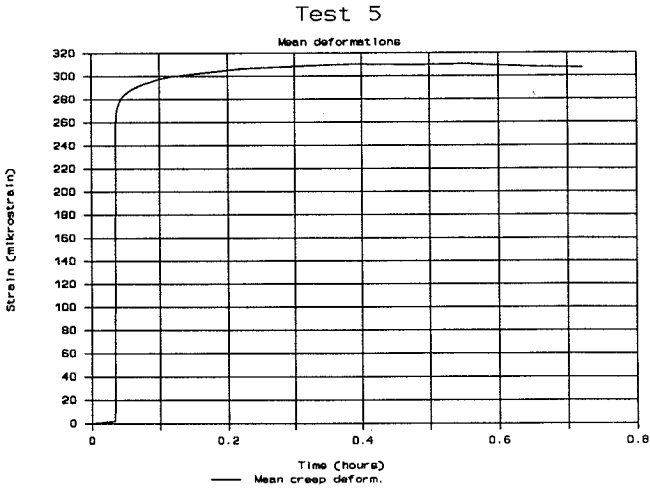


Figur B.4.4 Strength development

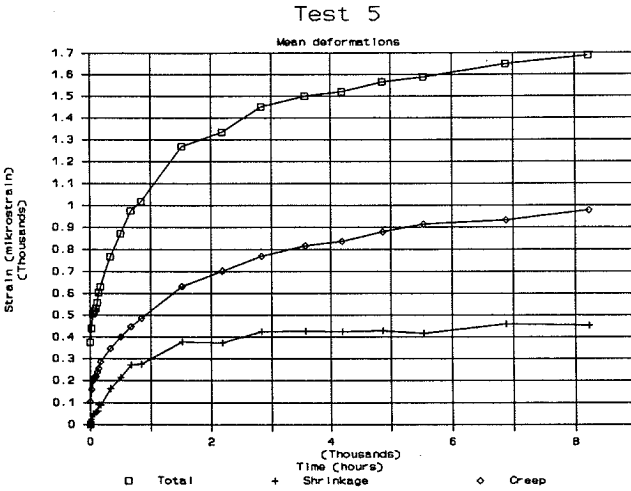




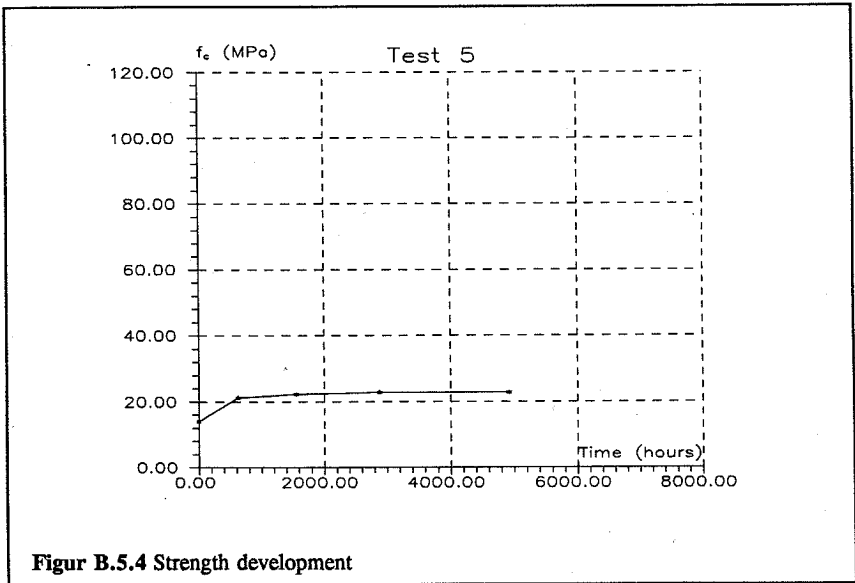
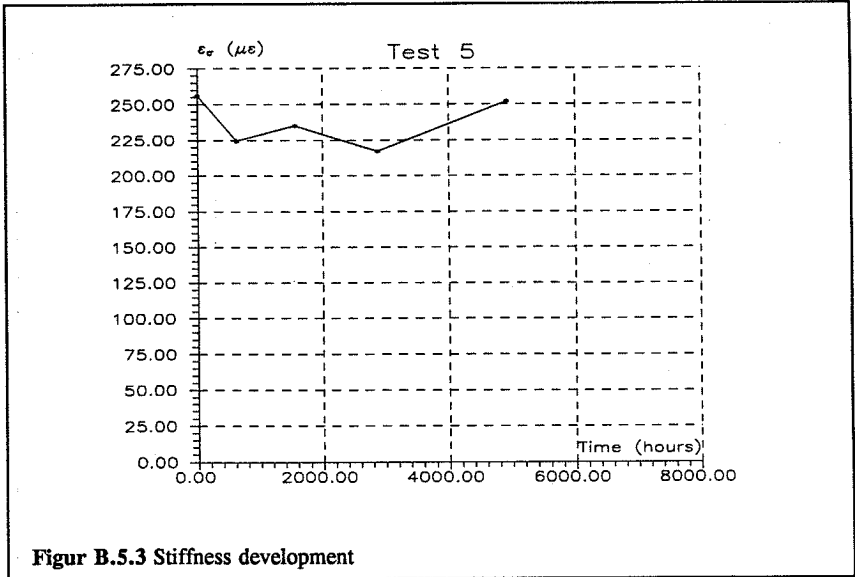
**Figur B.4.5** Mean weightloss of shrinkage specimens (long-time)

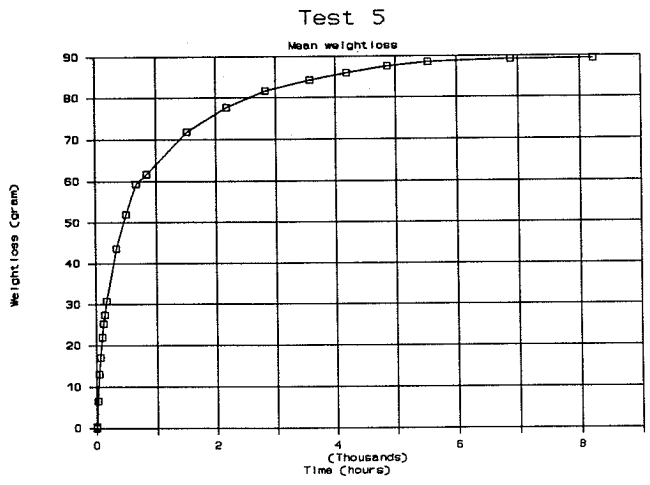


**Figur B.5.1** Mean deformation (short-time)

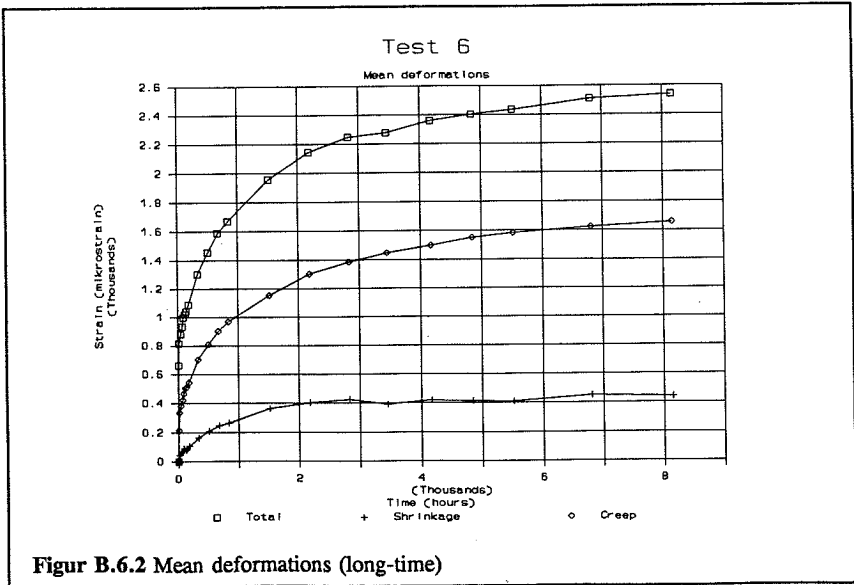
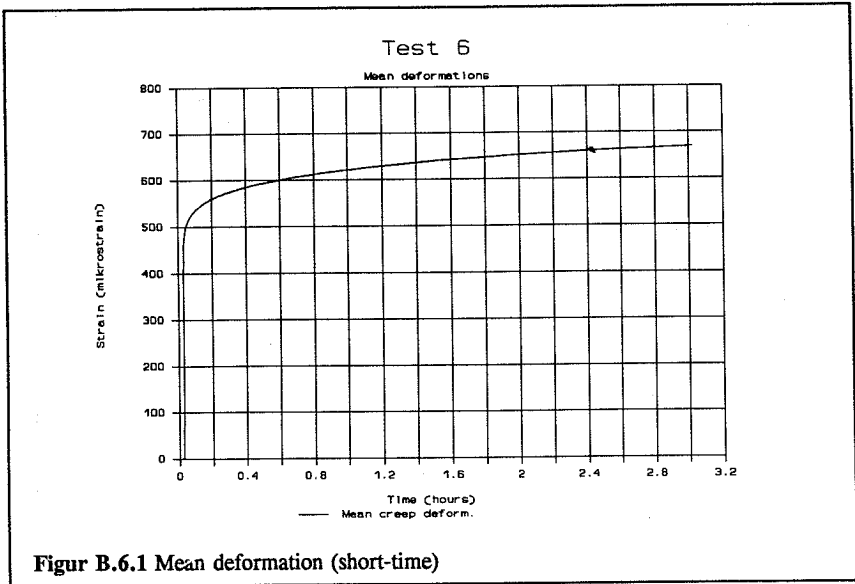


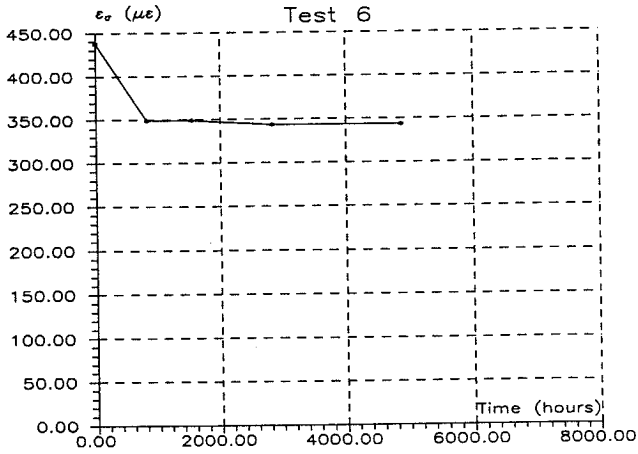
**Figur B.5.2** Mean deformations (long-time)



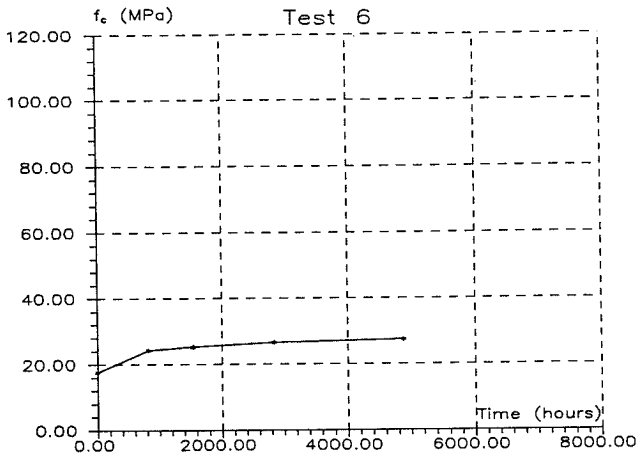


**Figur B.5.5** Mean weightloss of shrinkage specimens (long-time)

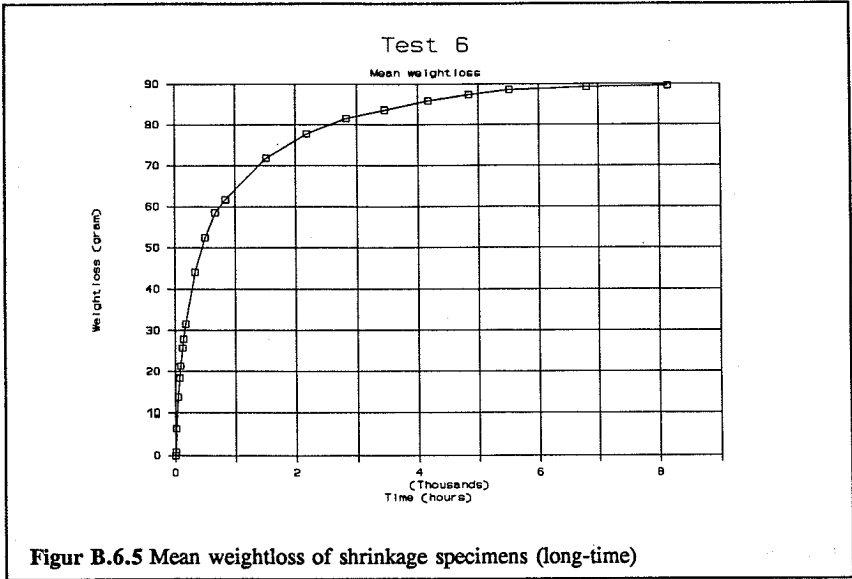


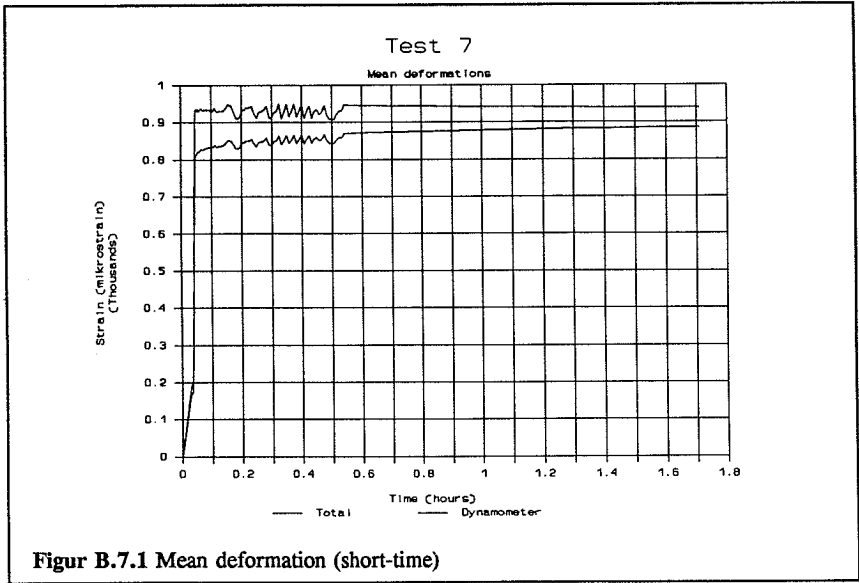


Figur B.6.3 Stiffness development

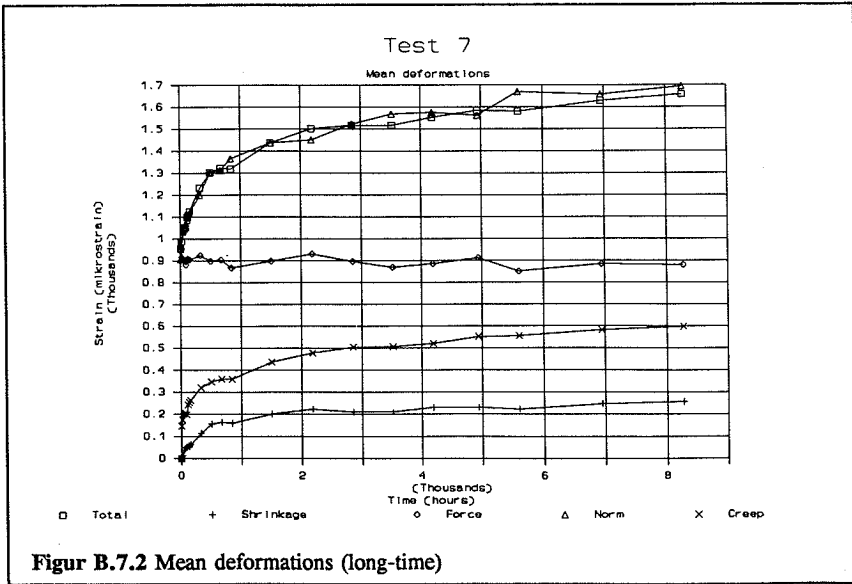


Figur B.6.4 Strength development



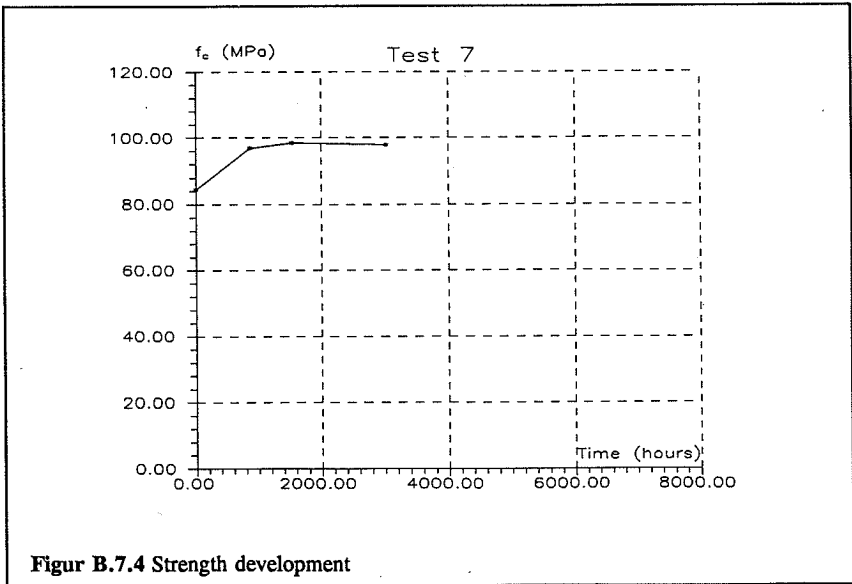
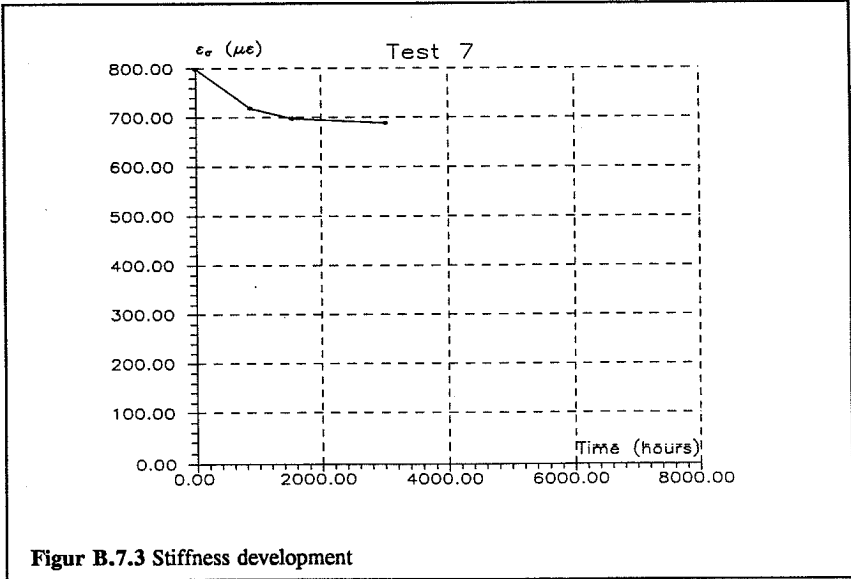


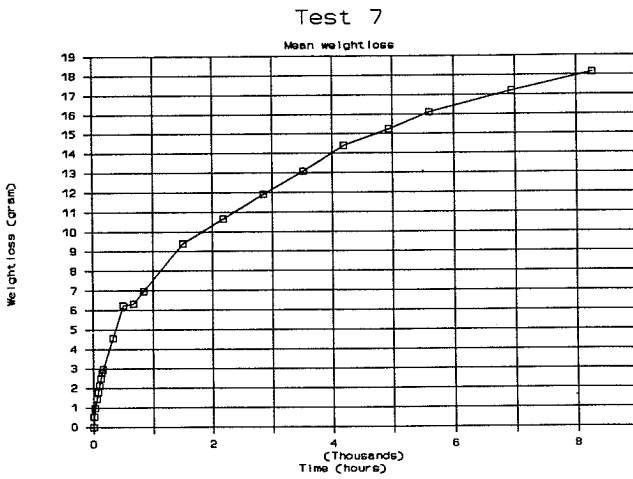
**Figure B.7.1 Mean deformation (short-time)**



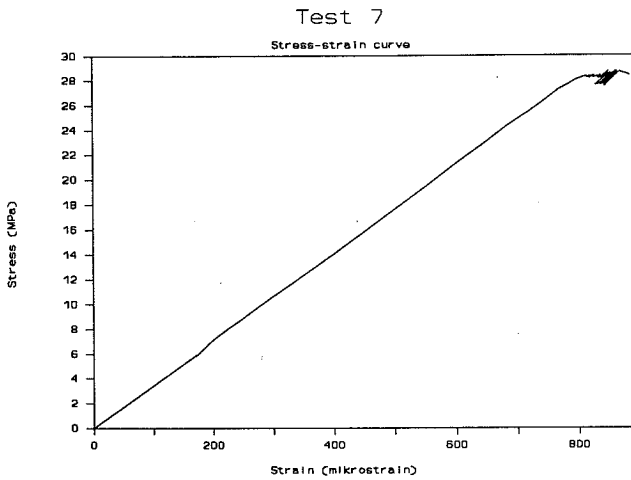
**Figure B.7.2 Mean deformations (long-time)**



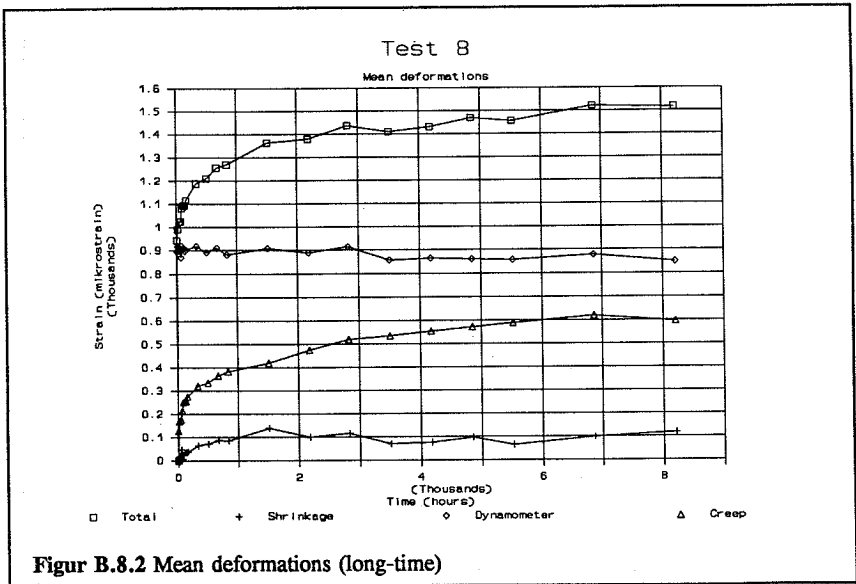
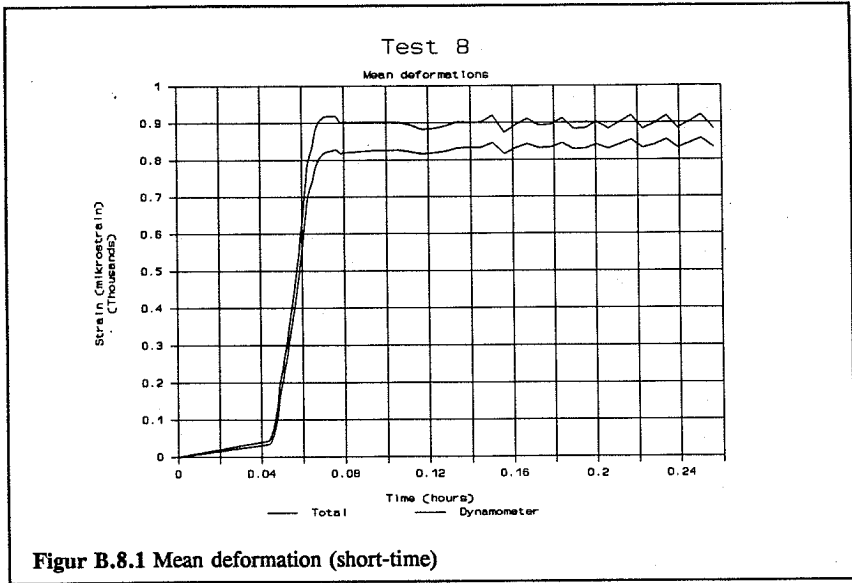


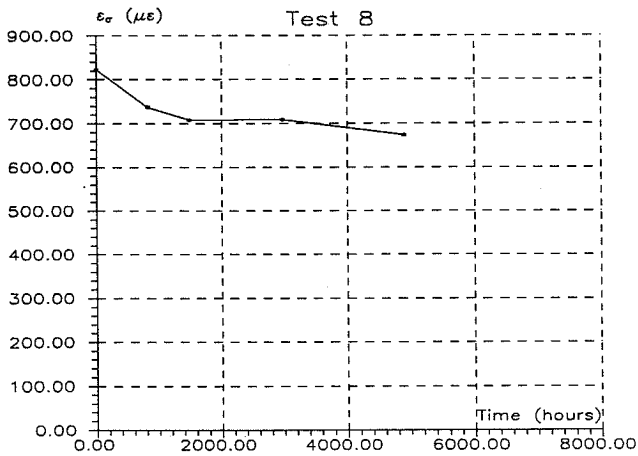


**Figure B.7.5** Mean weightloss of shrinkage specimens (long-time)

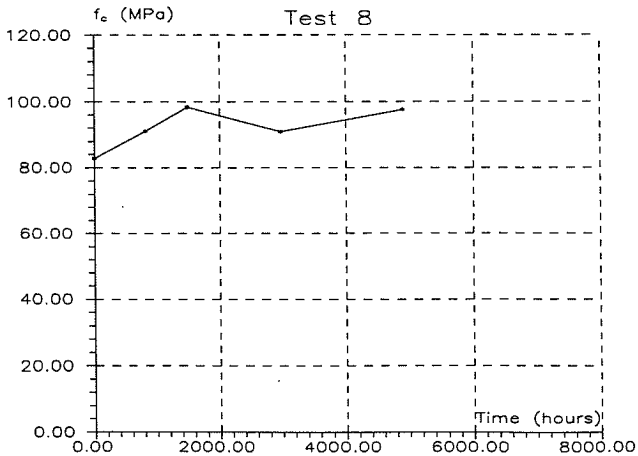


**Figure B.7.6** Stress-strain curve (short-time)

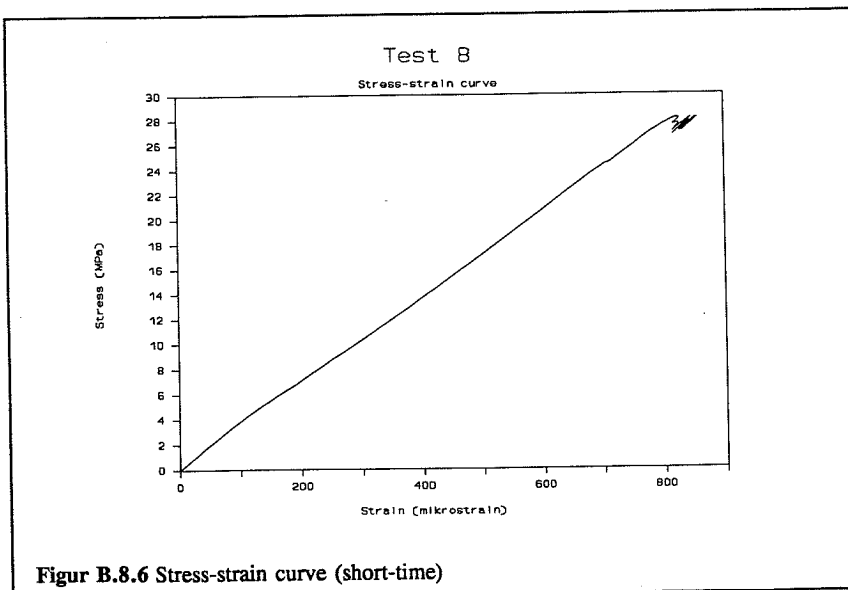
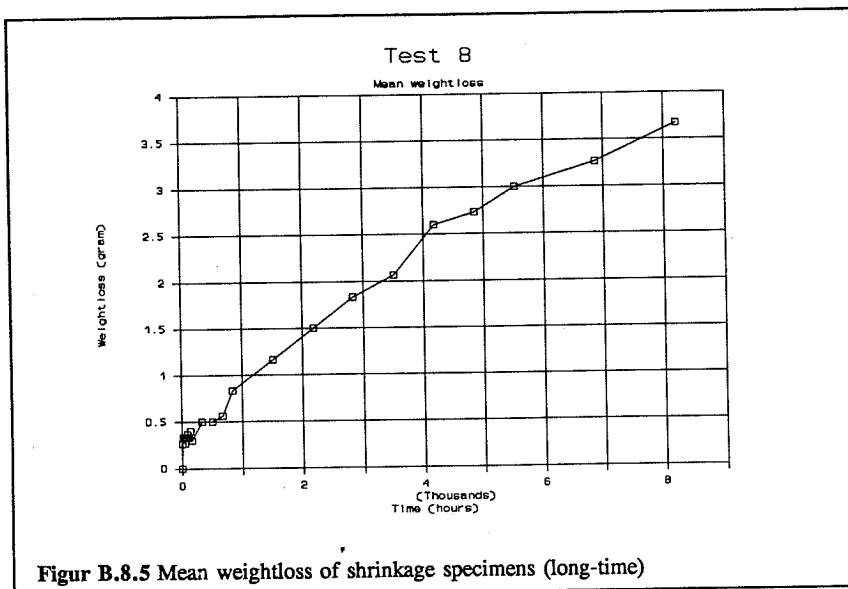


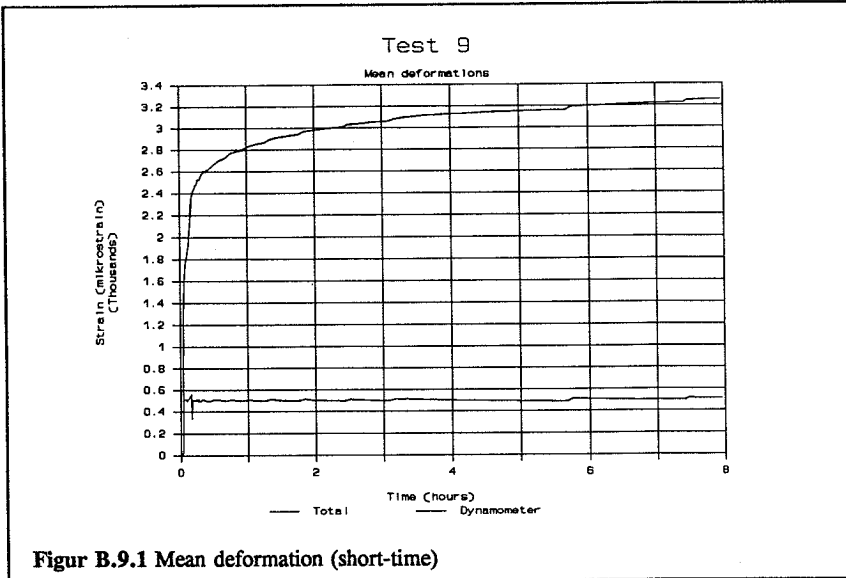


**Figure B.8.3 Stiffness development**

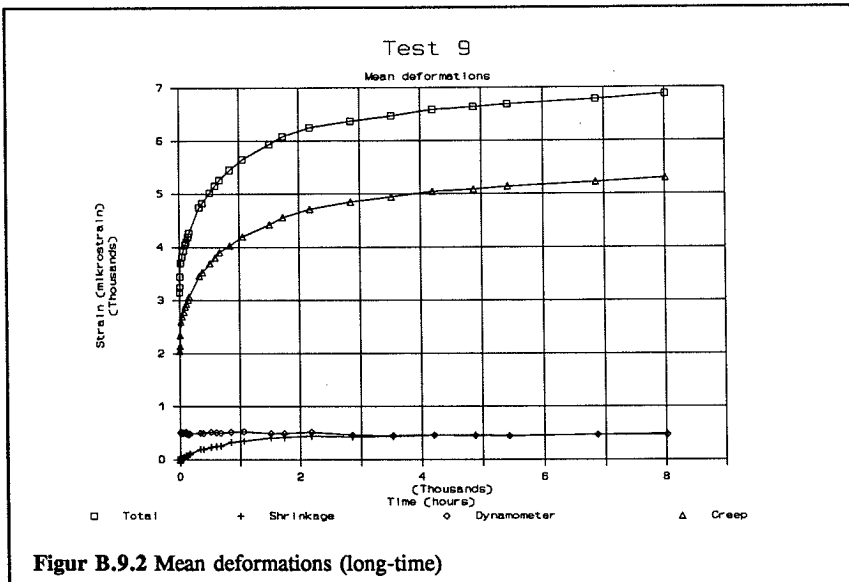


**Figure B.8.4 Strength development**

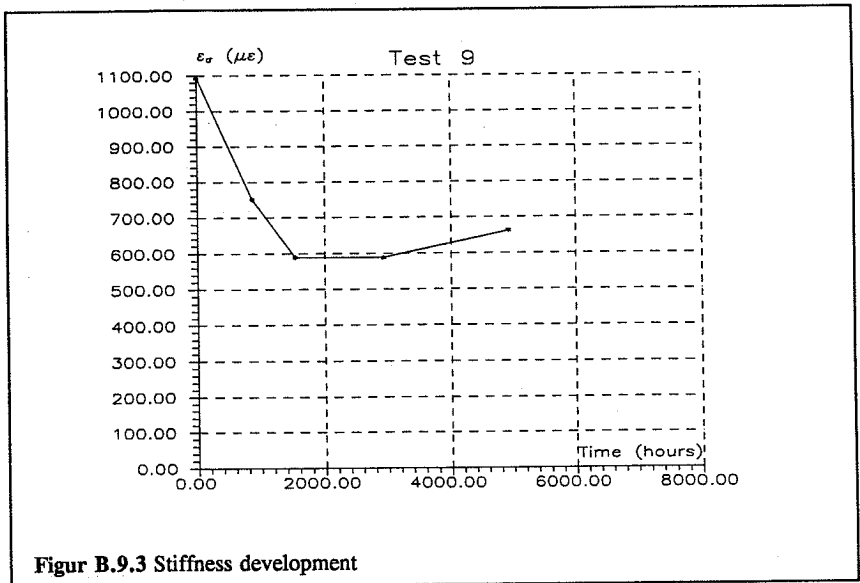




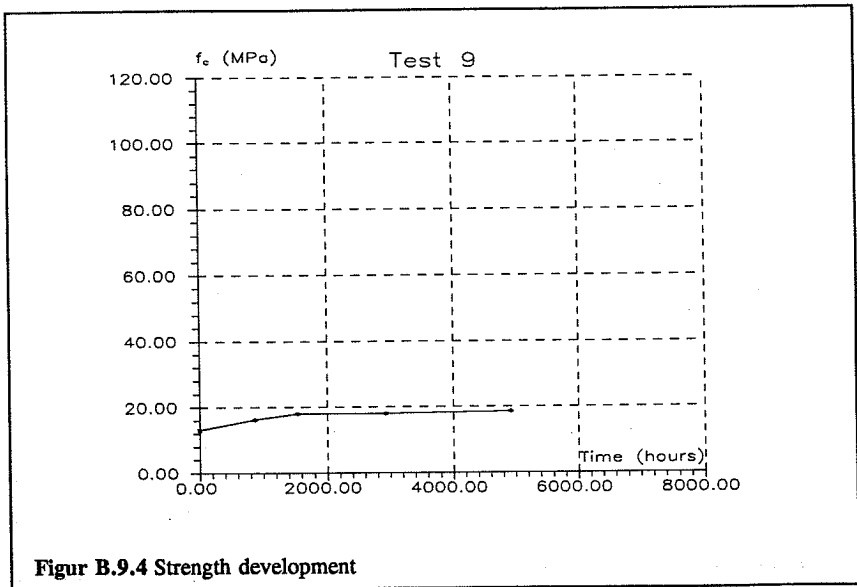
**Figur B.9.1** Mean deformation (short-time)



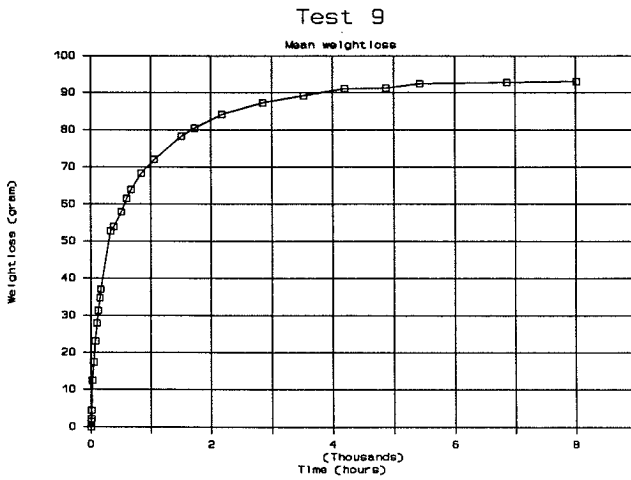
**Figur B.9.2** Mean deformations (long-time)



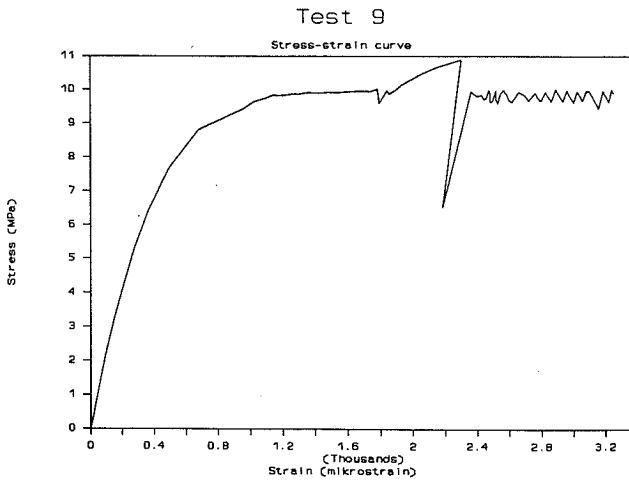
**Figur B.9.3 Stiffness development**



**Figur B.9.4 Strength development**

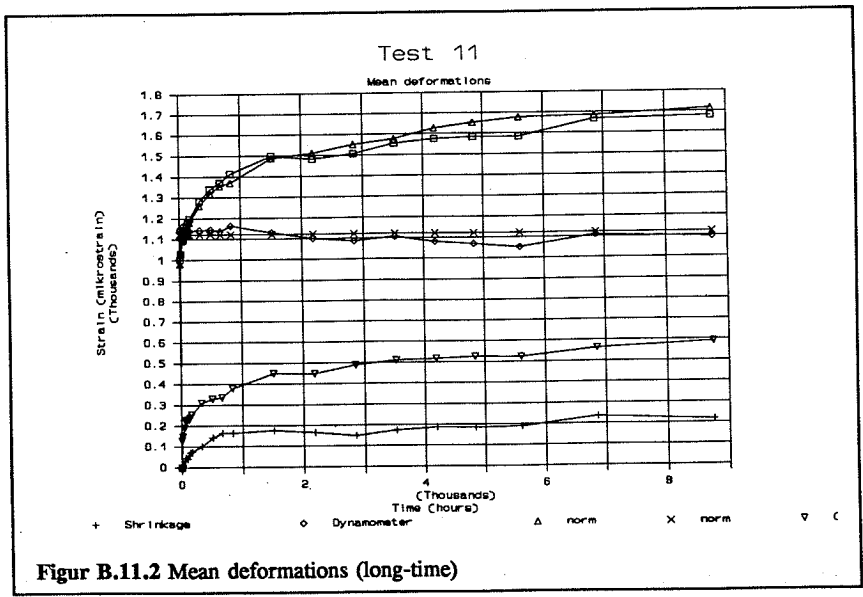
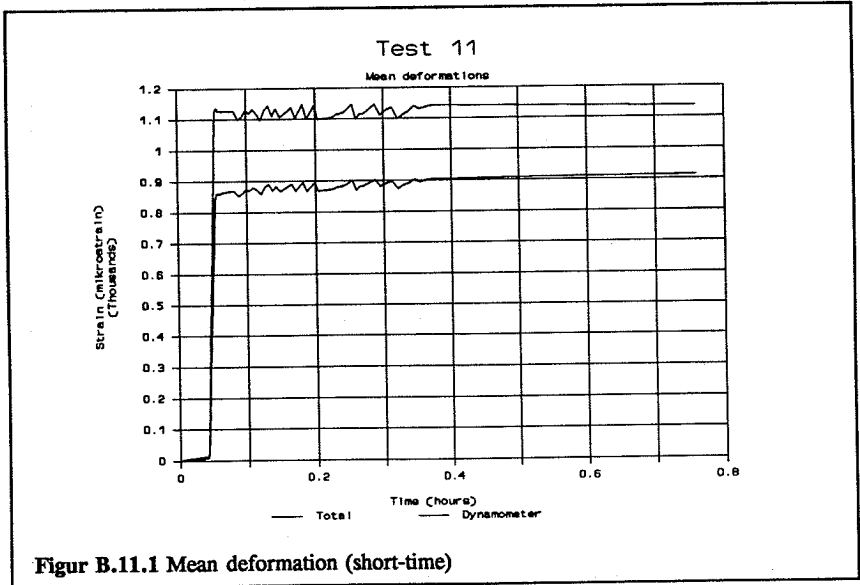


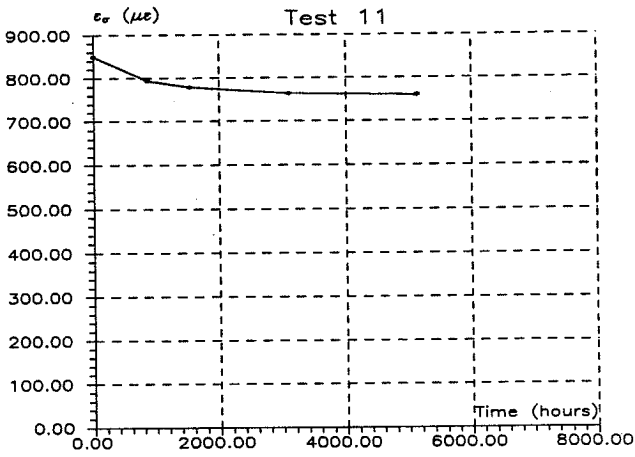
**Figur B.9.5** Mean weightloss of shrinkage specimens (long-time)



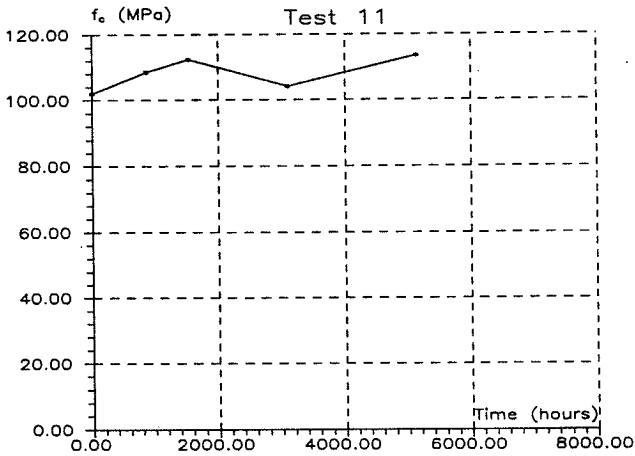
**Figur B.9.6** Stress-strain curve (short-time)



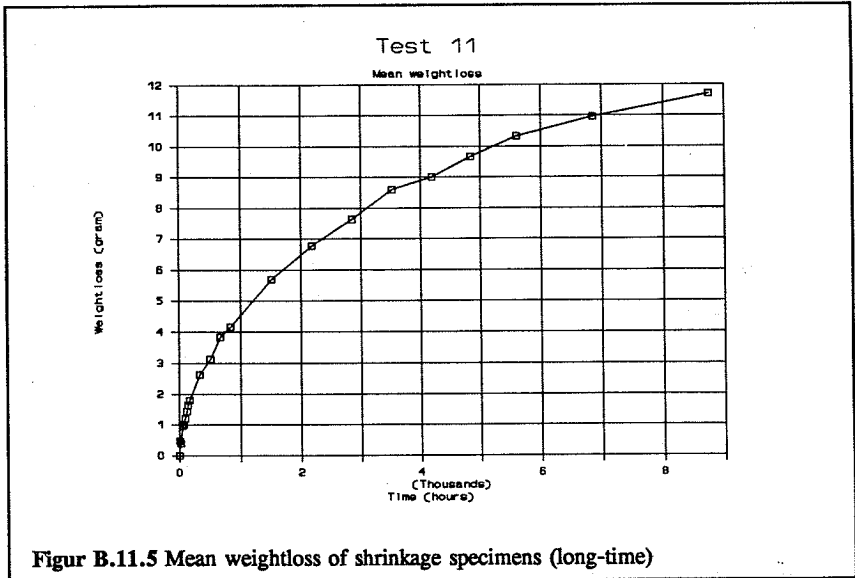




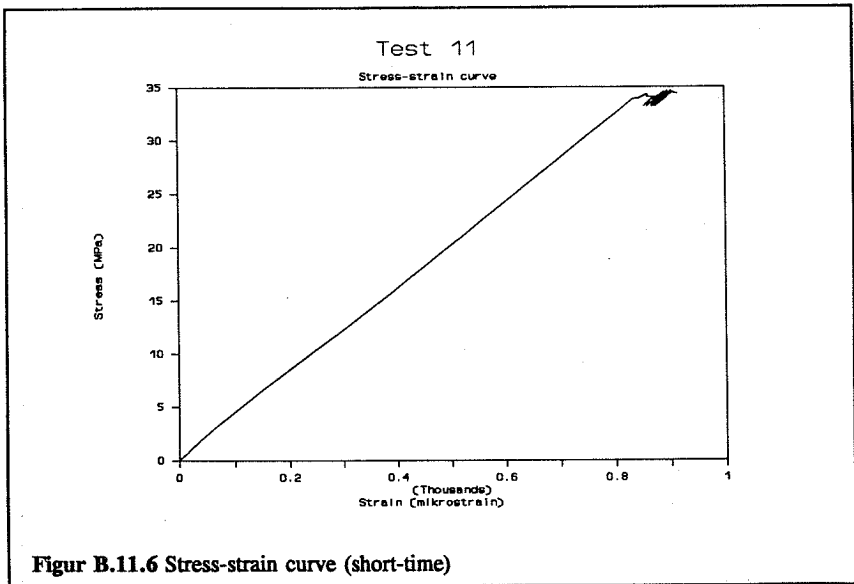
Figur B.11.3 Stiffness development



Figur B.11.4 Strength development

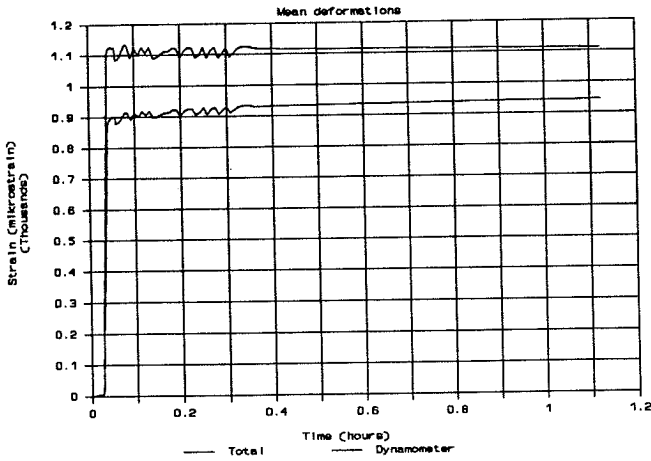


**Figur B.11.5** Mean weightloss of shrinkage specimens (long-time)



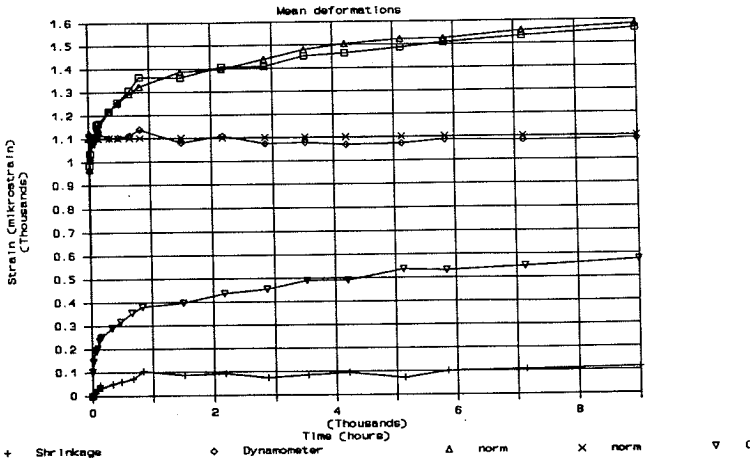
**Figur B.11.6** Stress-strain curve (short-time)

### Test 12

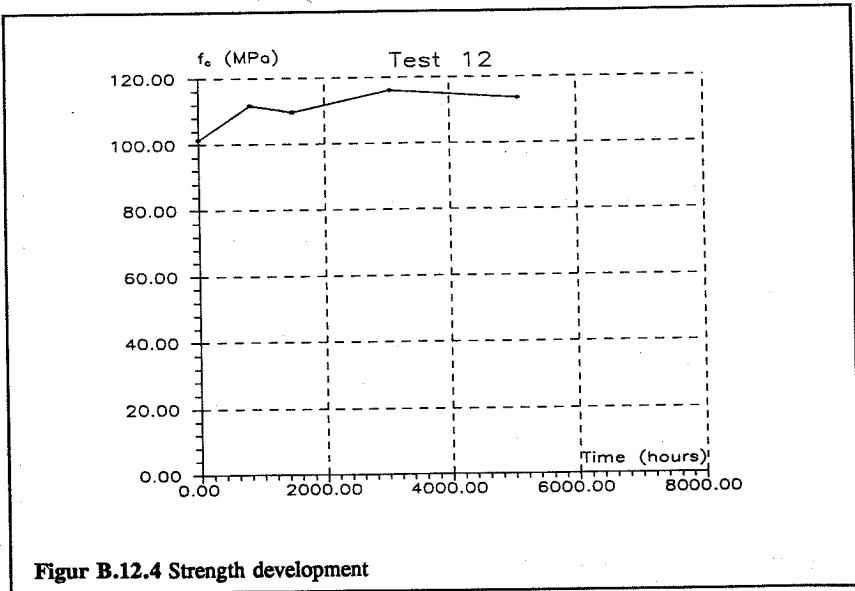
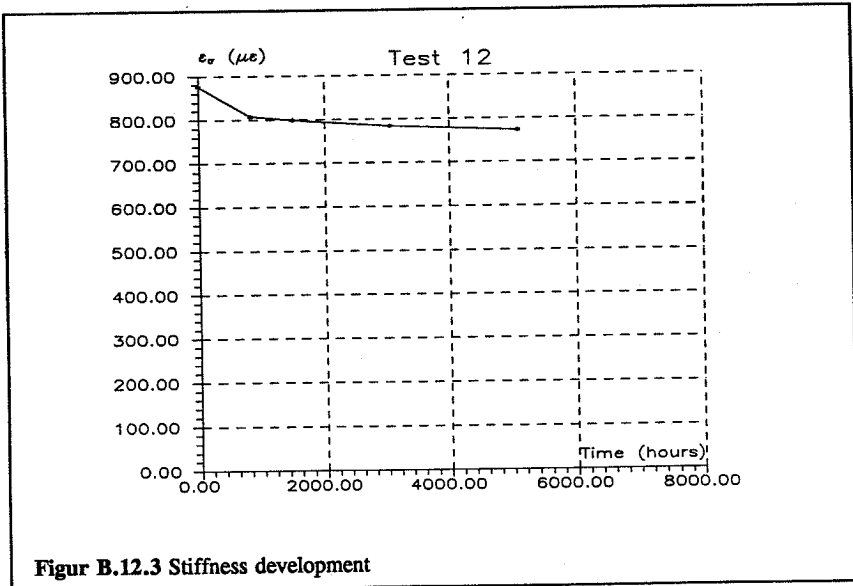


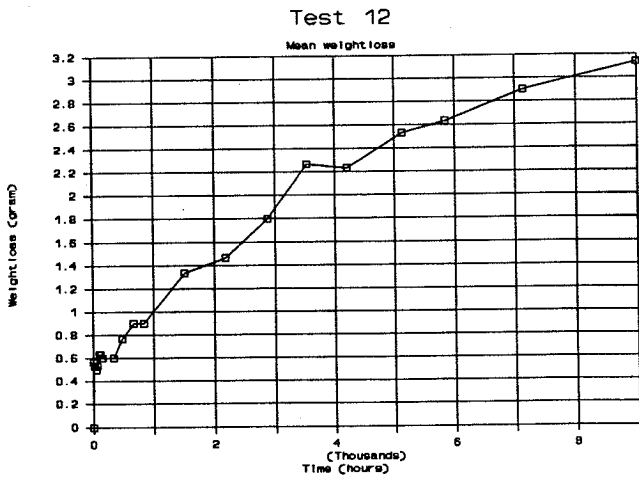
Figur B.12.1 Mean deformation (short-time)

### Test 12

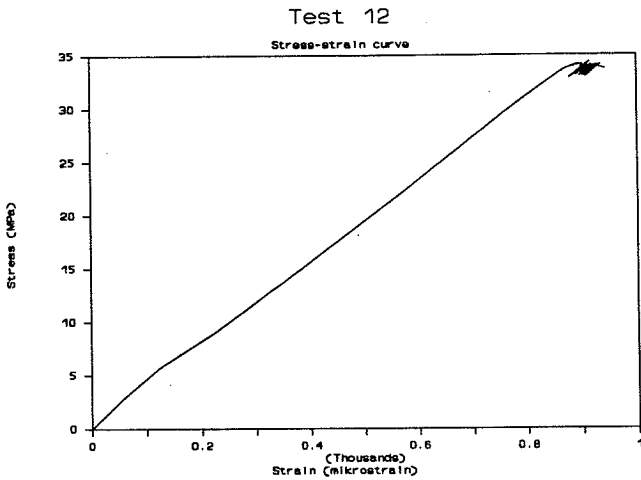


Figur B.12.2 Mean deformations (long-time)

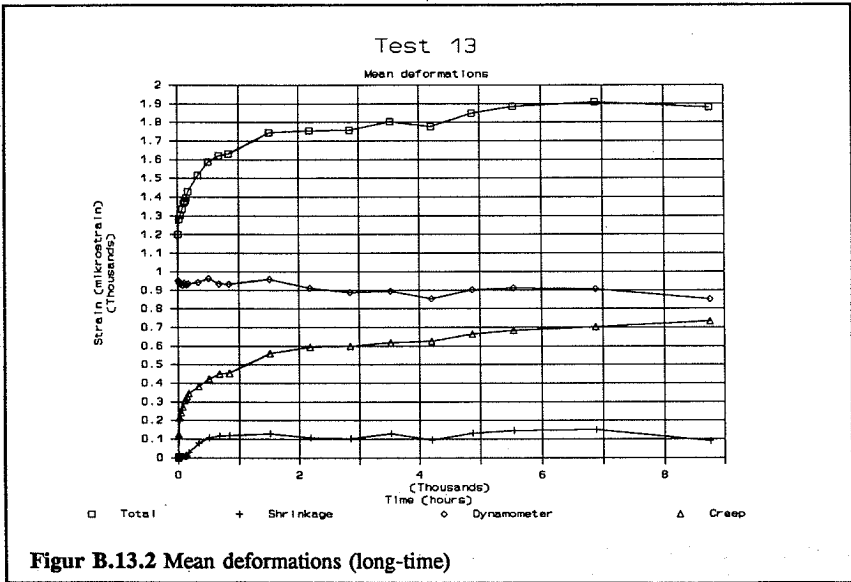
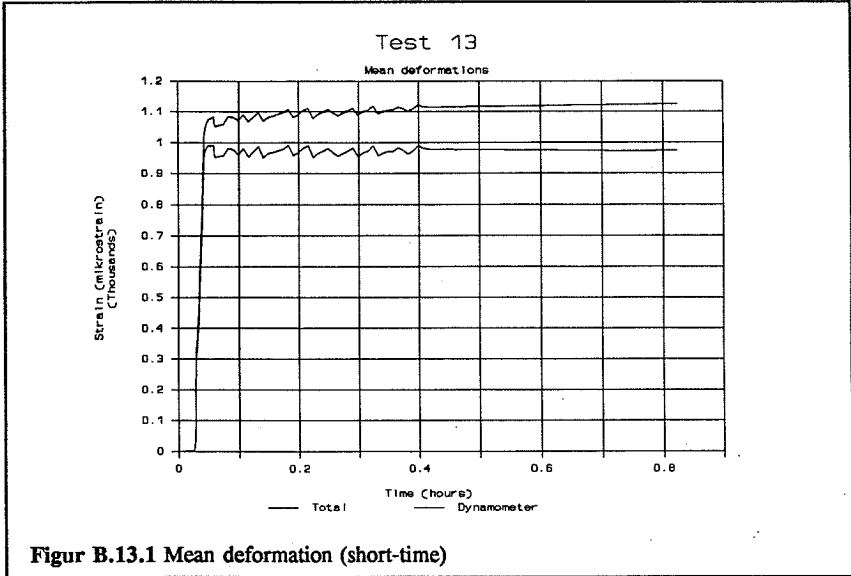


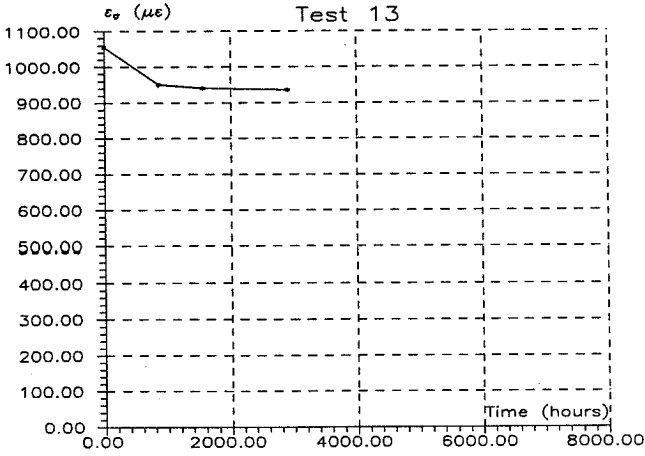


**Figur B.12.5** Mean weightloss of shrinkage specimens (long-time)

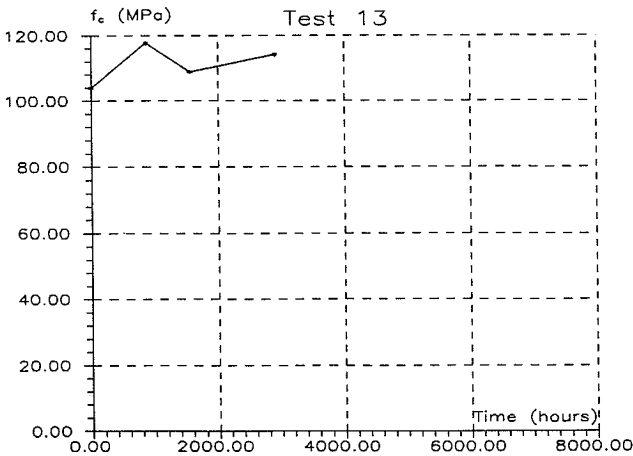


**Figur B.12.6** Stress-strain curve (short-time)



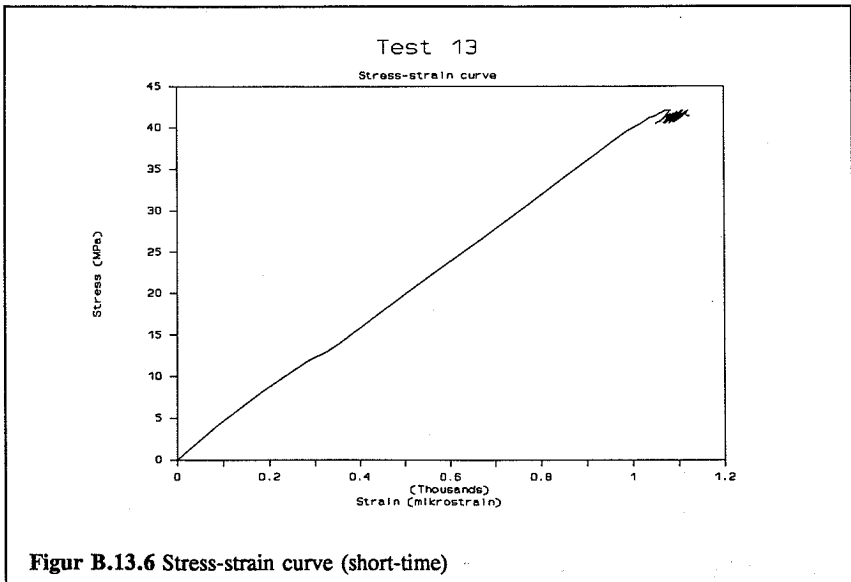
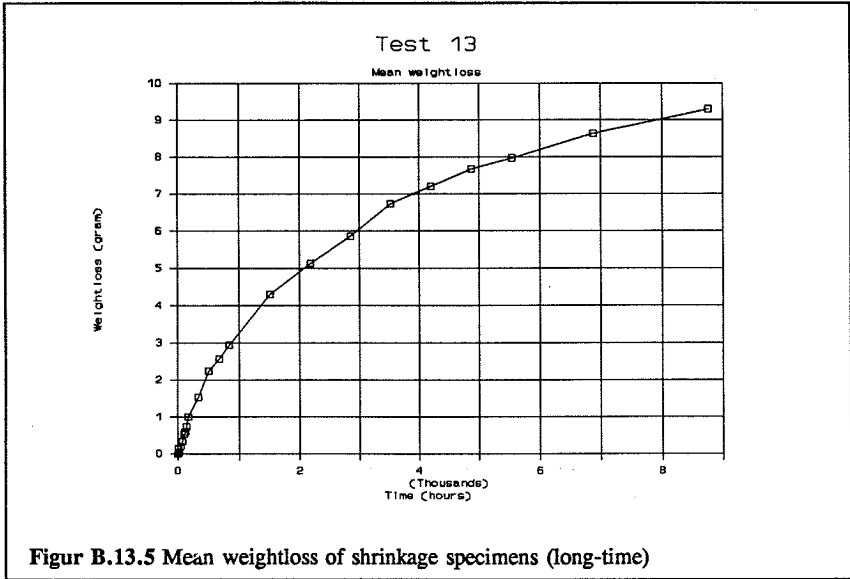


Figur B.13.3 Stiffness development



Figur B.13.4 Strength development





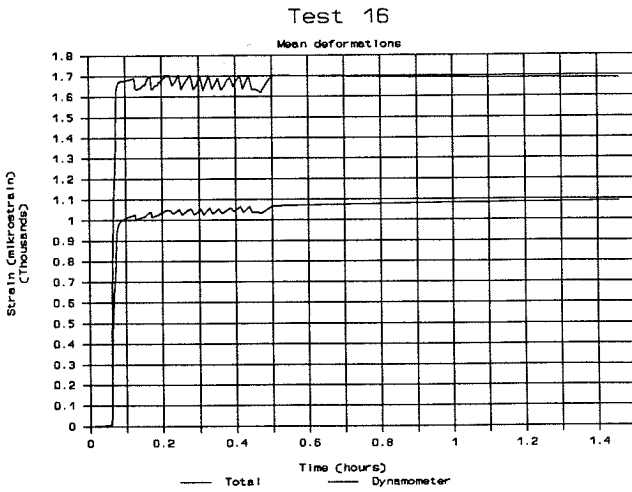


Figure B.16.1 Mean deformation (short-time)

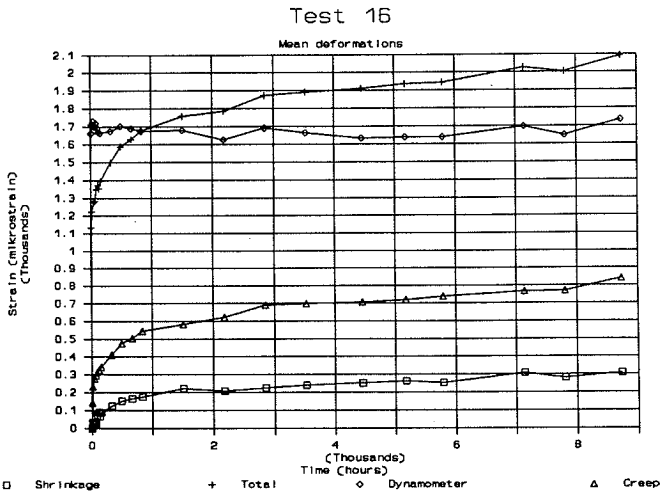
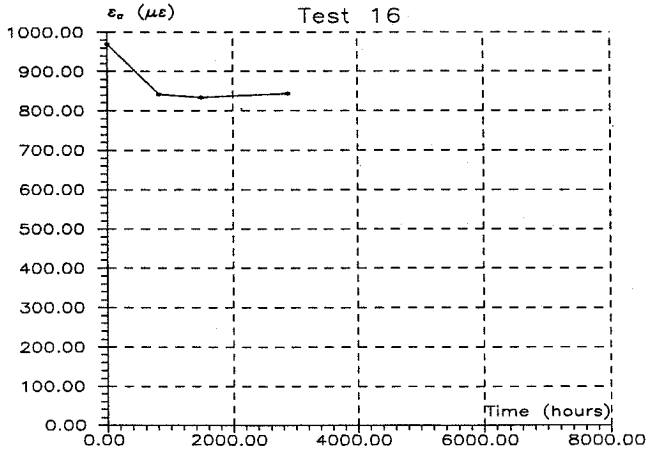
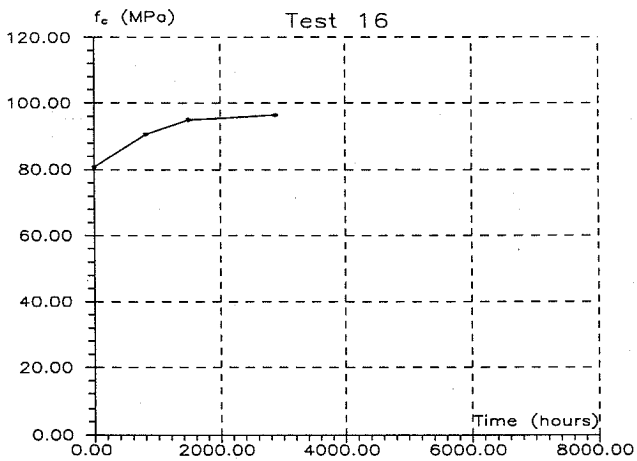


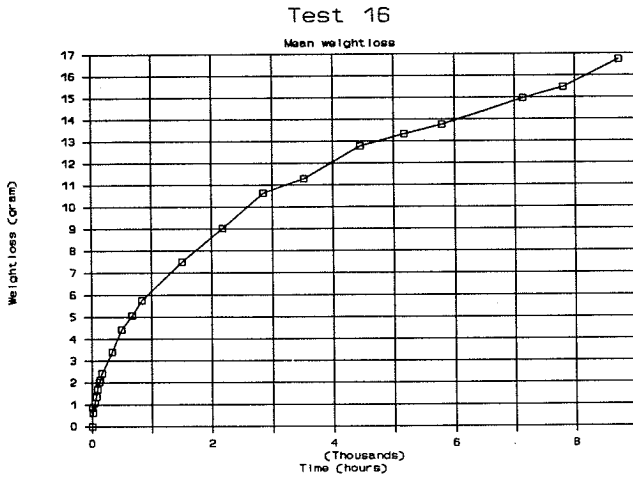
Figure B.16.2 Mean deformations (long-time)



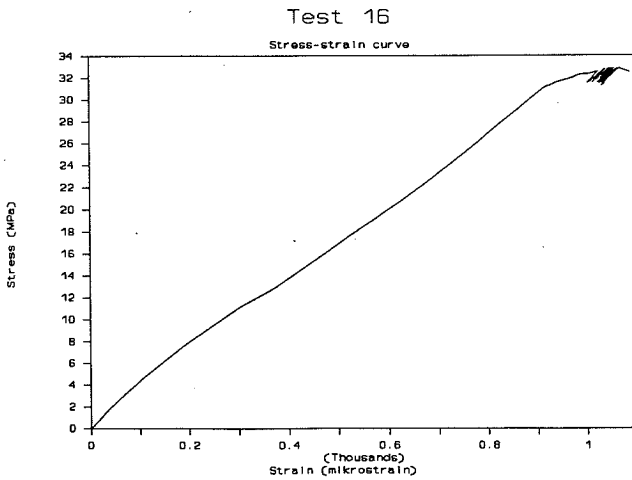
Figur B.16.3 Stiffness development



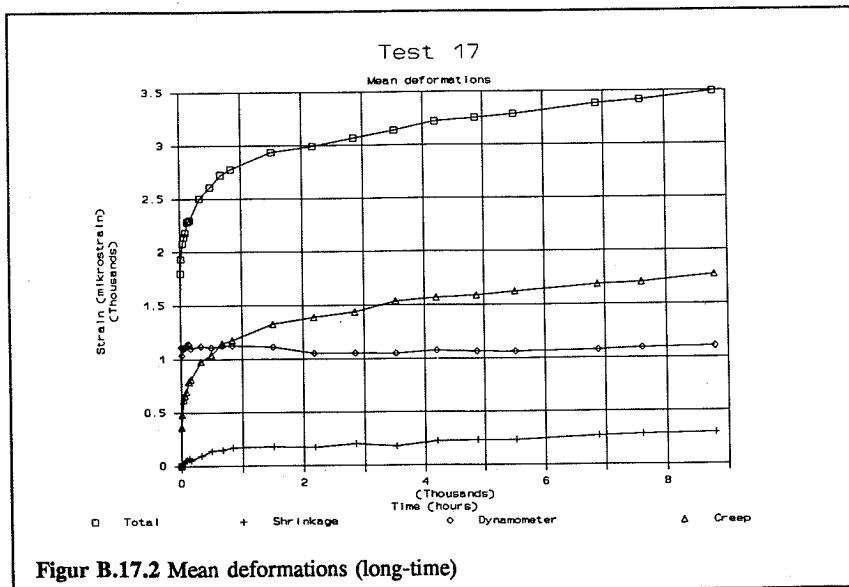
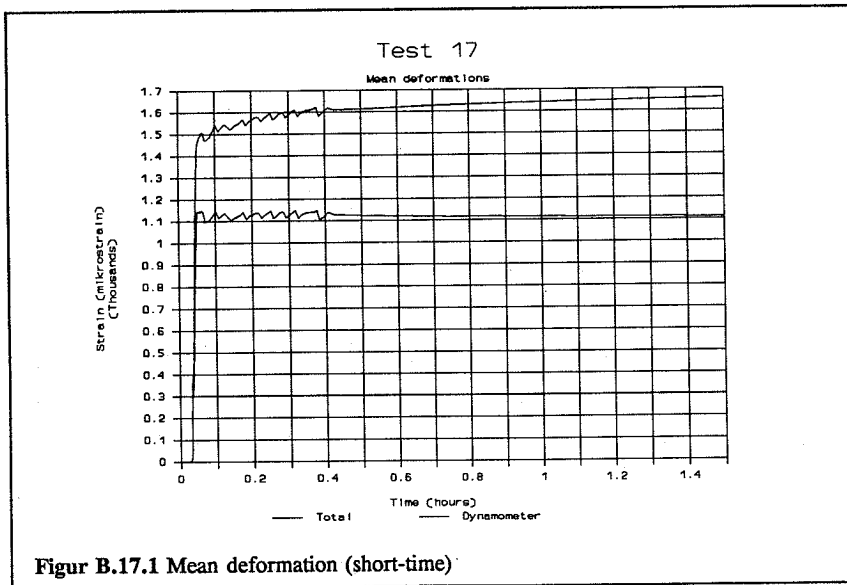
Figur B.16.4 Strength development

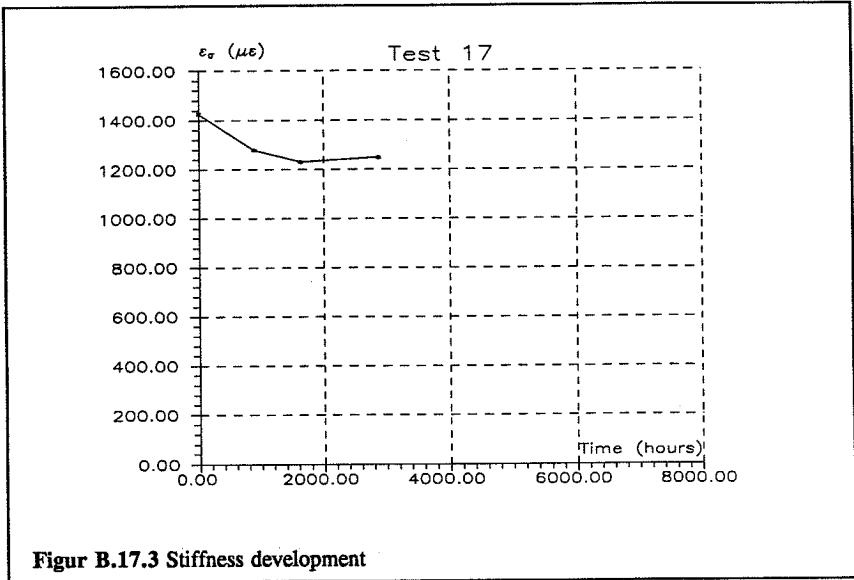


**Figure B.16.5** Mean weightloss of shrinkage specimens (long-time)

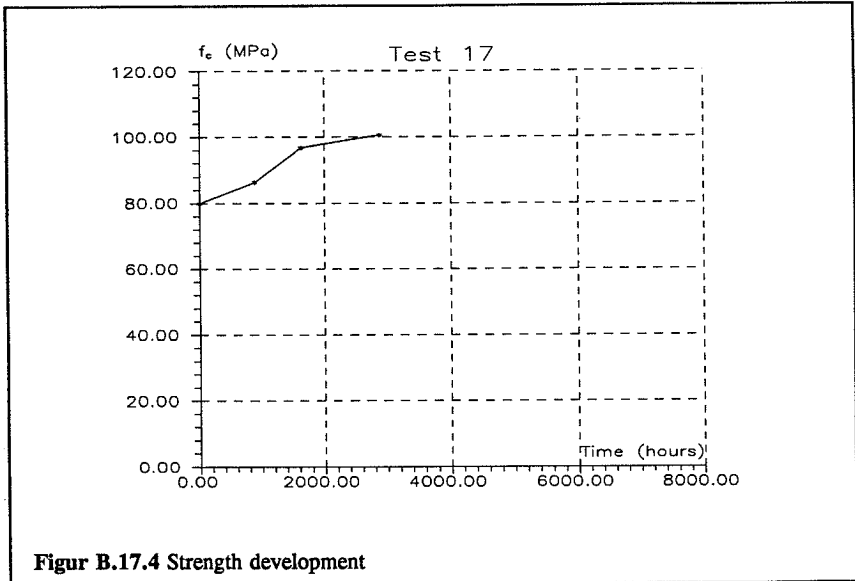


**Figure B.16.6** Stress-strain curve (short-time)

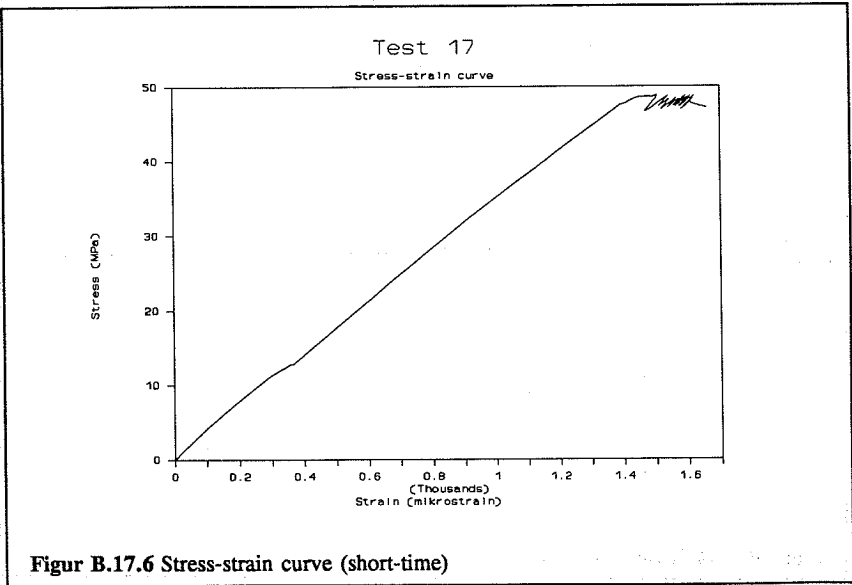
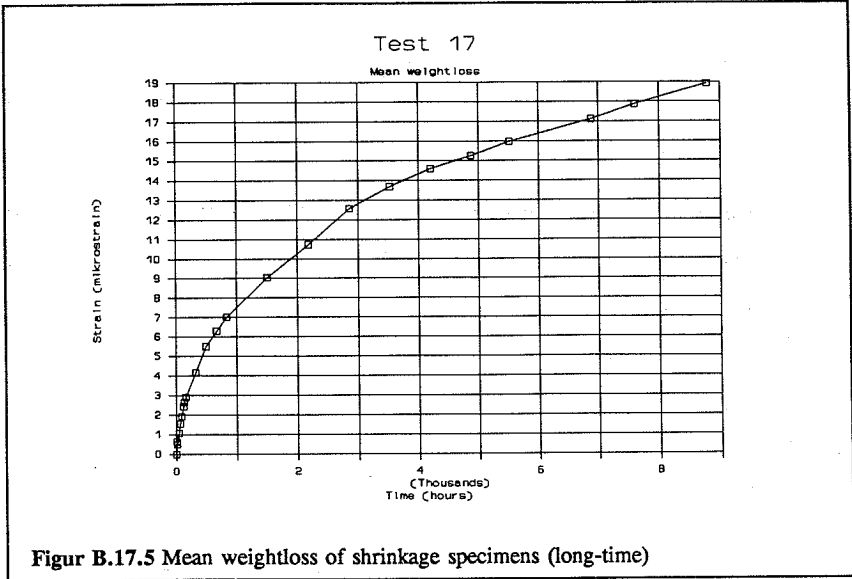


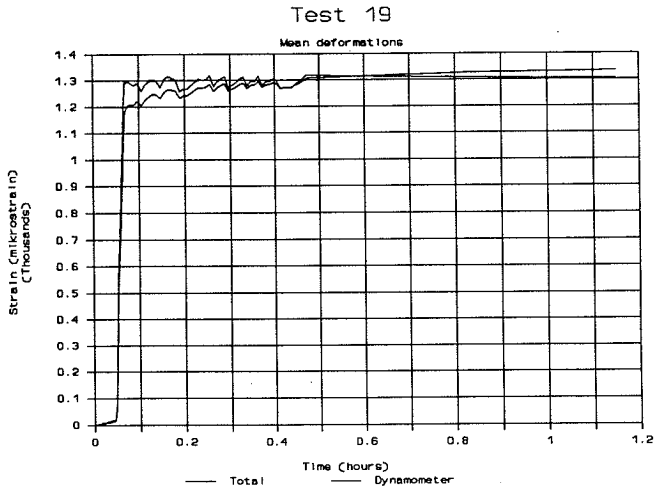


**Figur B.17.3 Stiffness development**

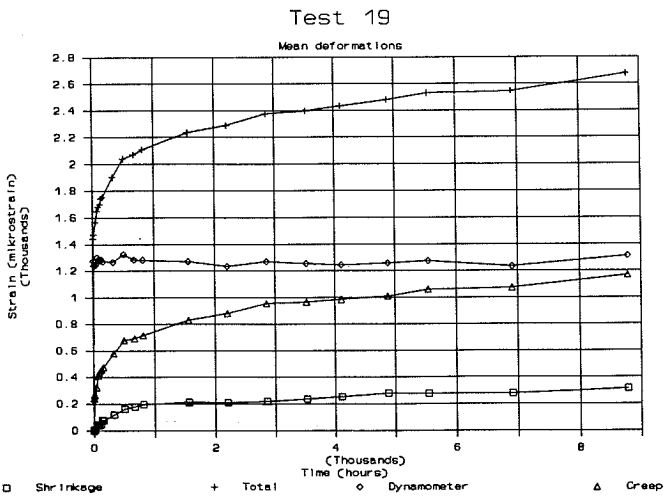


**Figur B.17.4 Strength development**



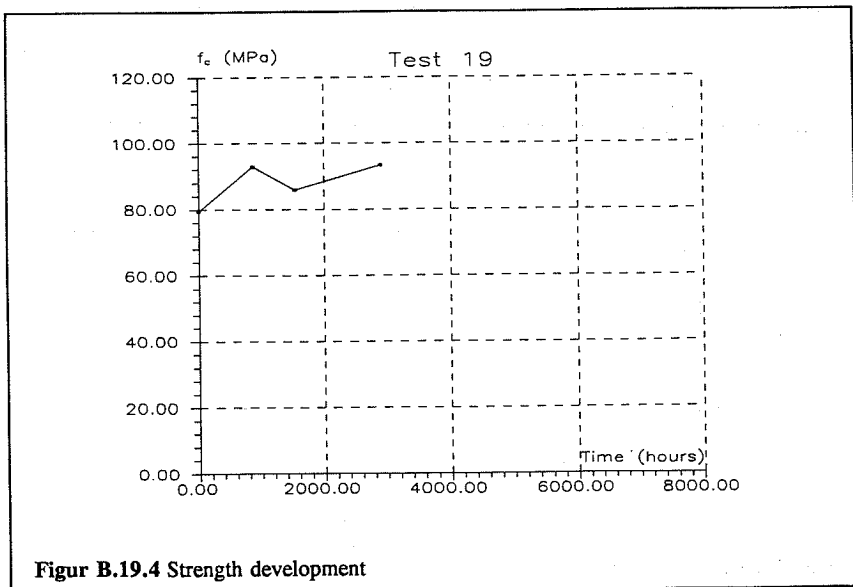
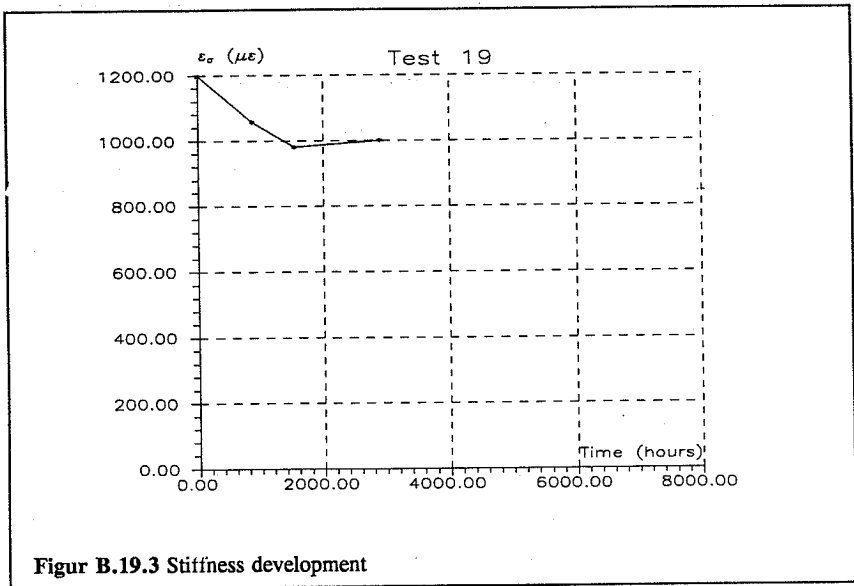


Figur B.19.1 Mean deformation (short-time)



Figur B.19.2 Mean deformations (long-time)





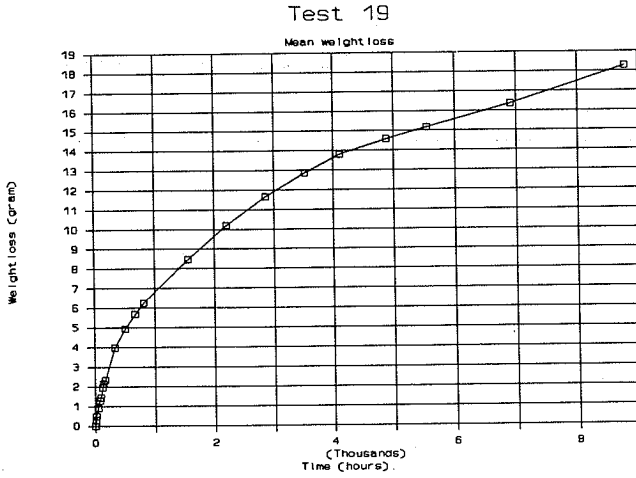


Figure B.19.5 Mean weightloss of shrinkage specimens (long-time)

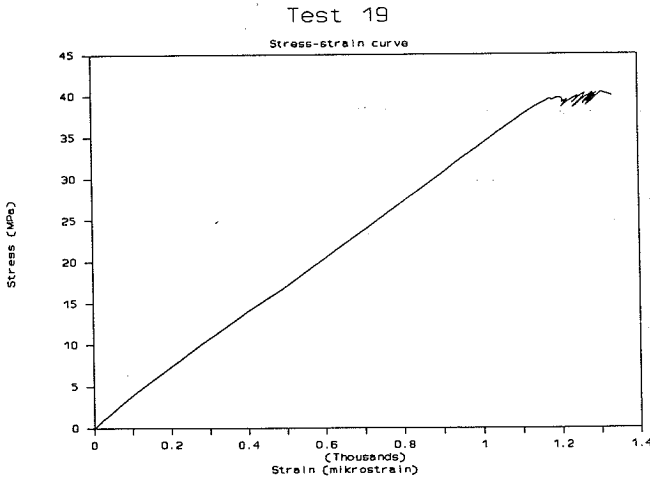
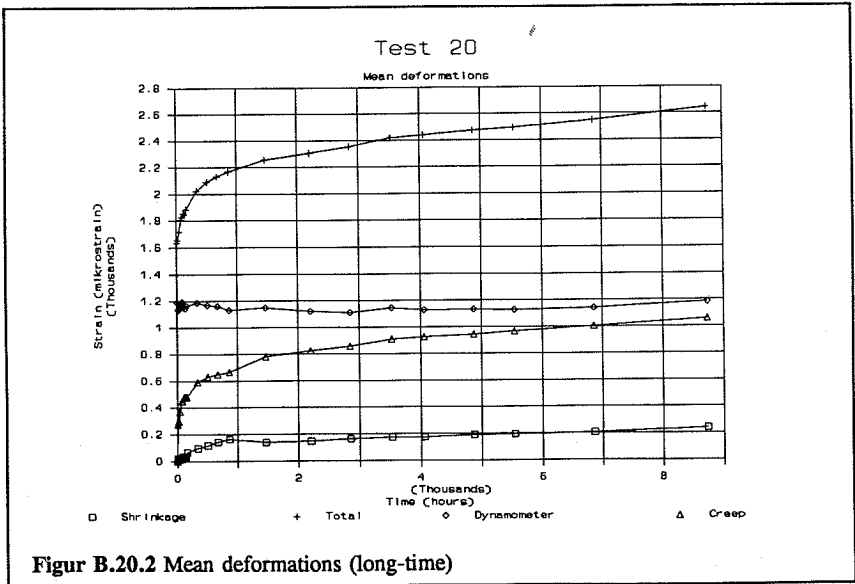
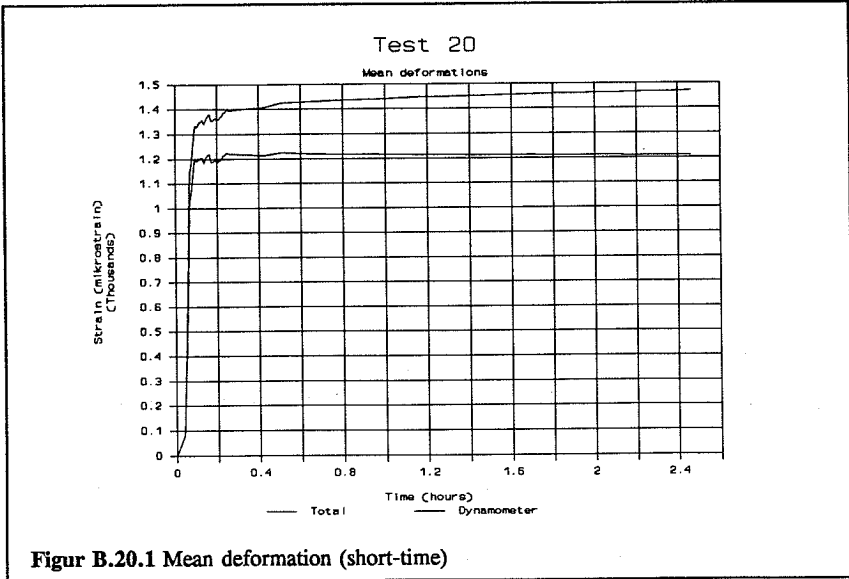
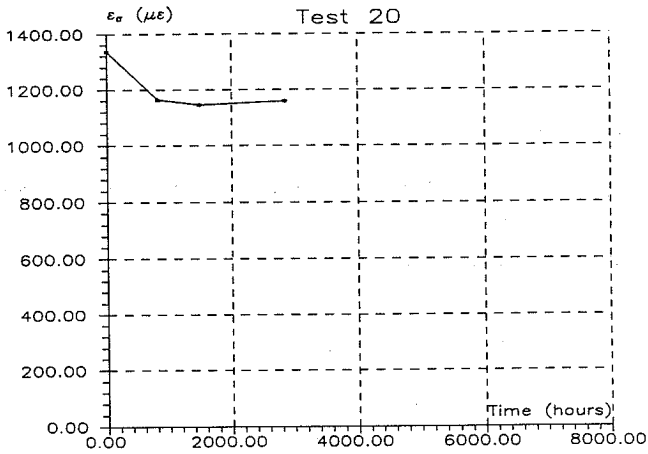
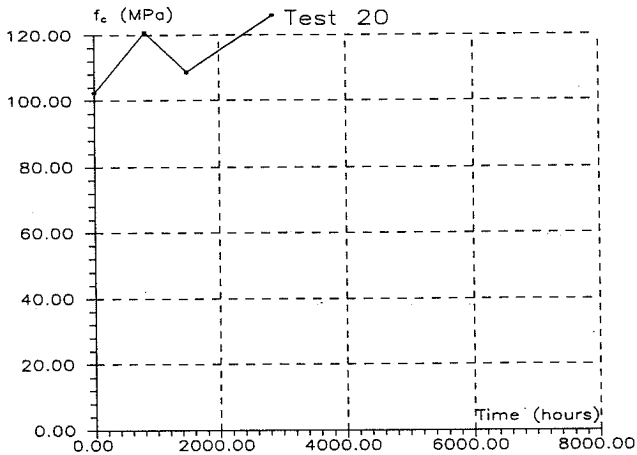


Figure B.19.6 Stress-strain curve (short-time)

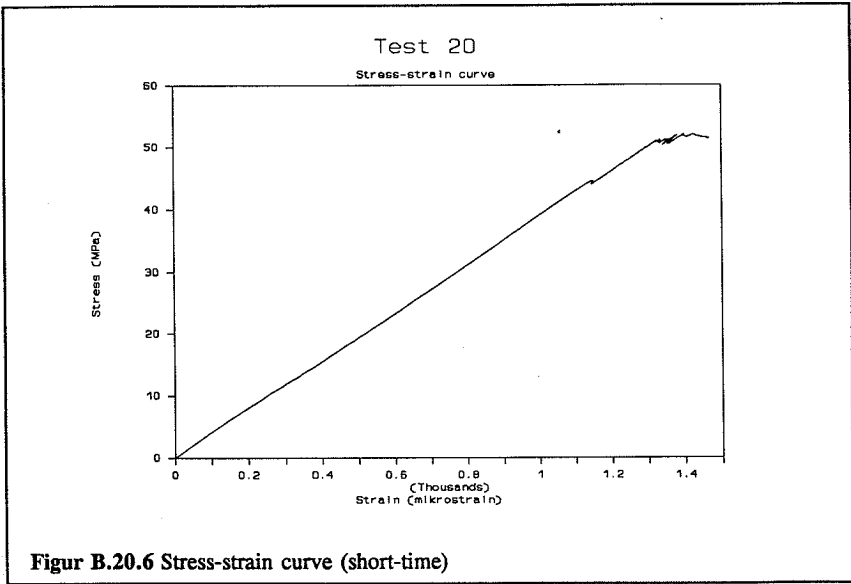
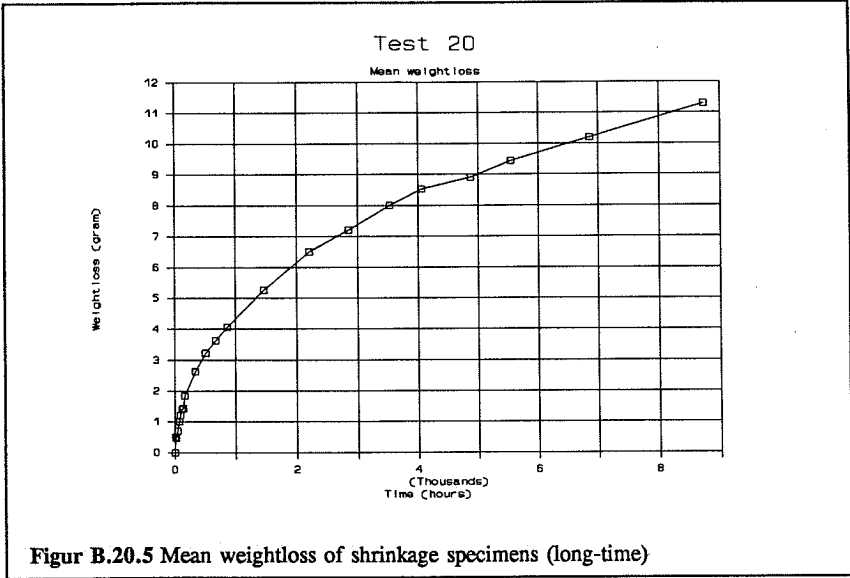


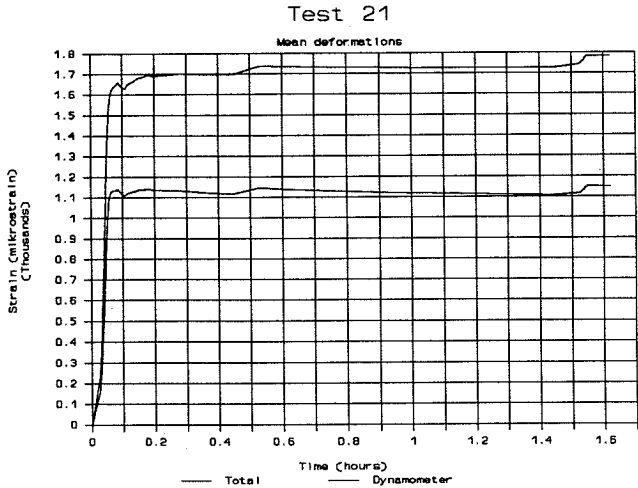


Figur B.20.3 Stiffness development

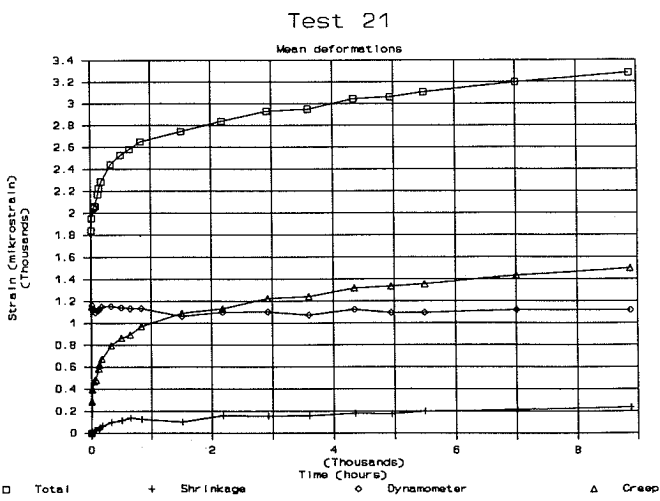


Figur B.20.4 Strength development

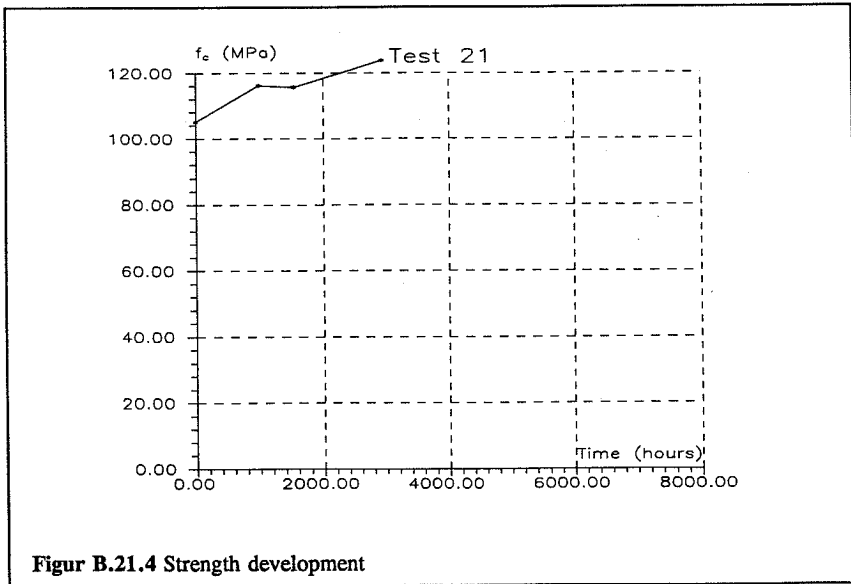
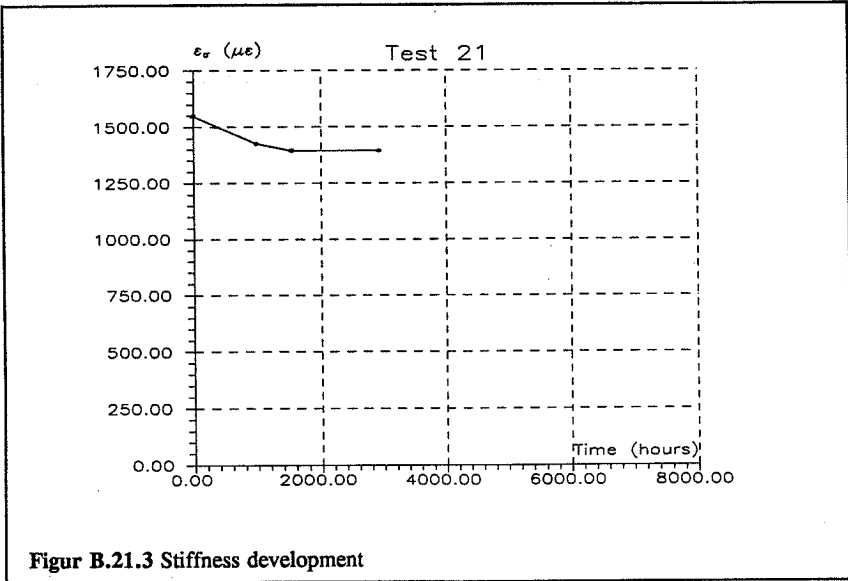


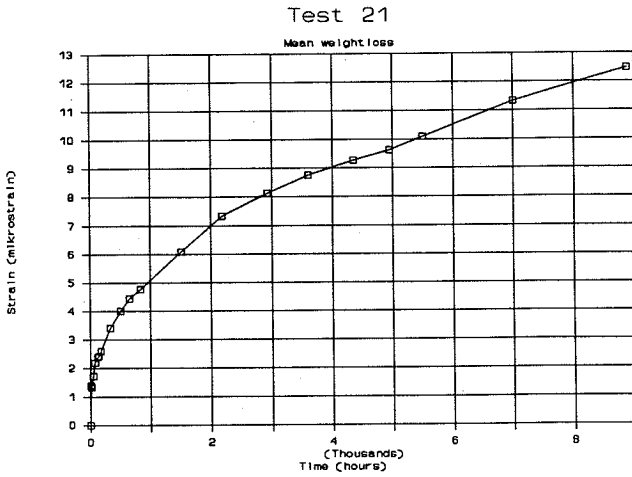


**Figure B.21.1 Mean deformation (short-time)**

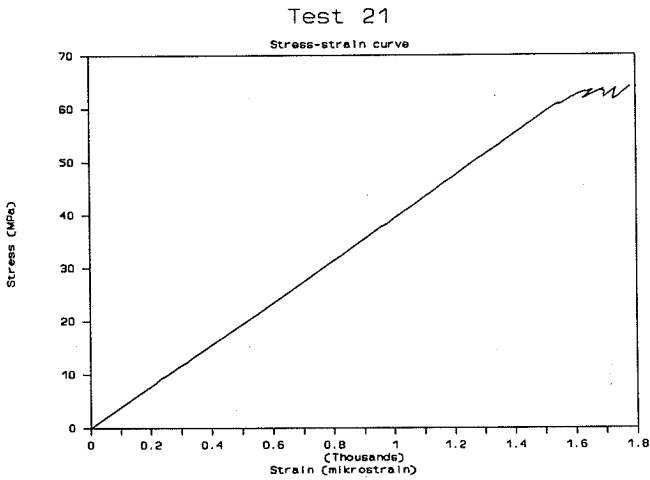


**Figure B.21.2 Mean deformations (long-time)**



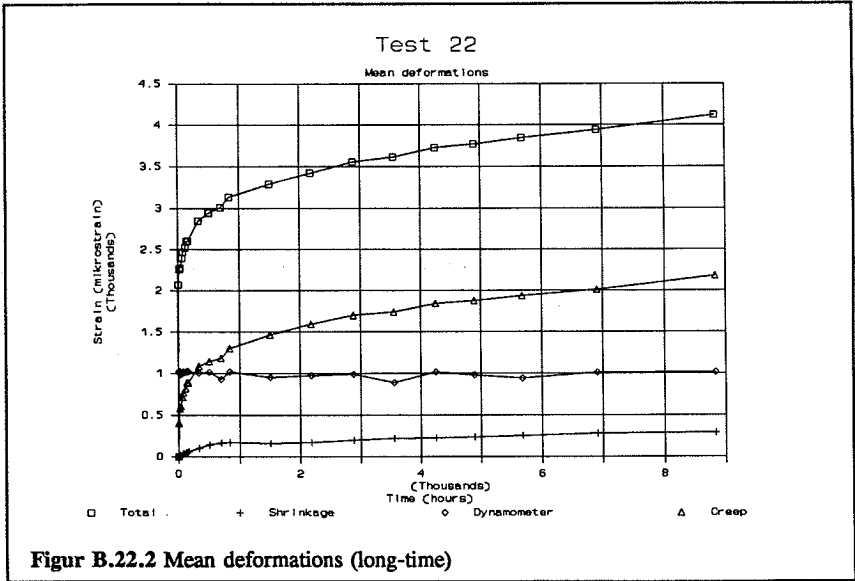
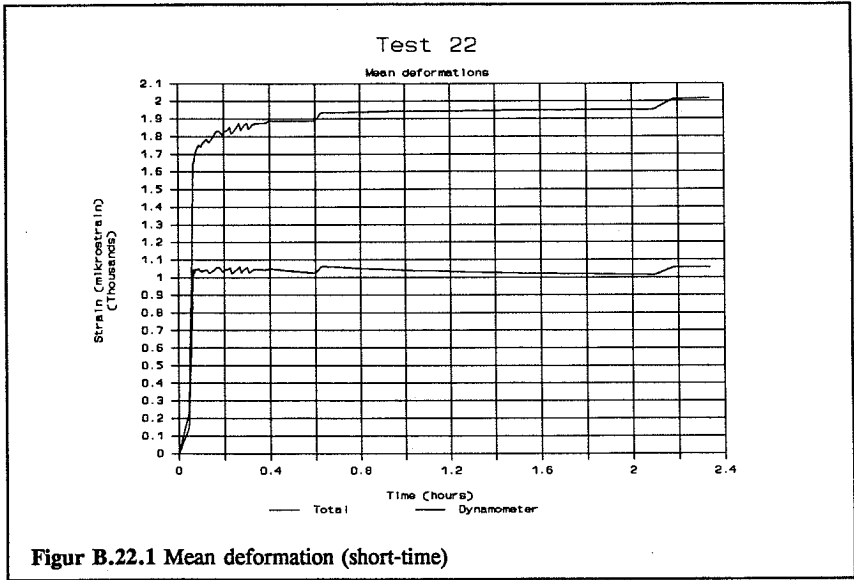


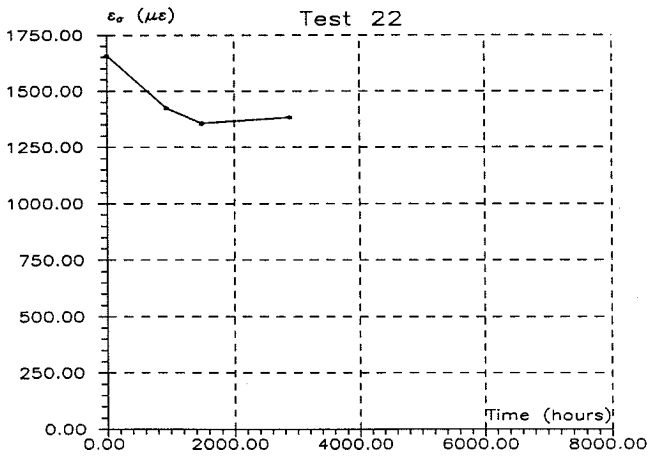
**Figur B.21.5** Mean weightloss of shrinkage specimens (long-time)



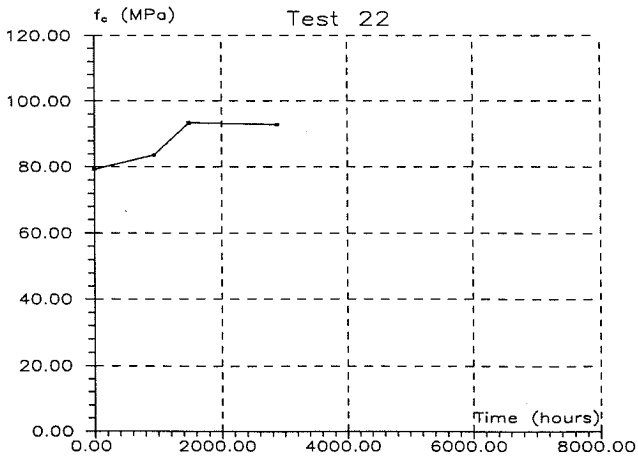
**Figur B.21.6** Stress-strain curve (short-time)



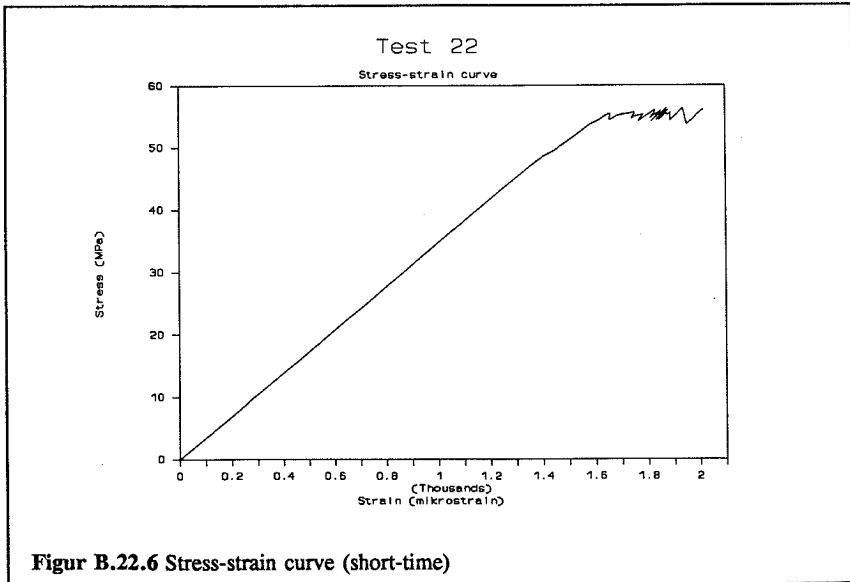
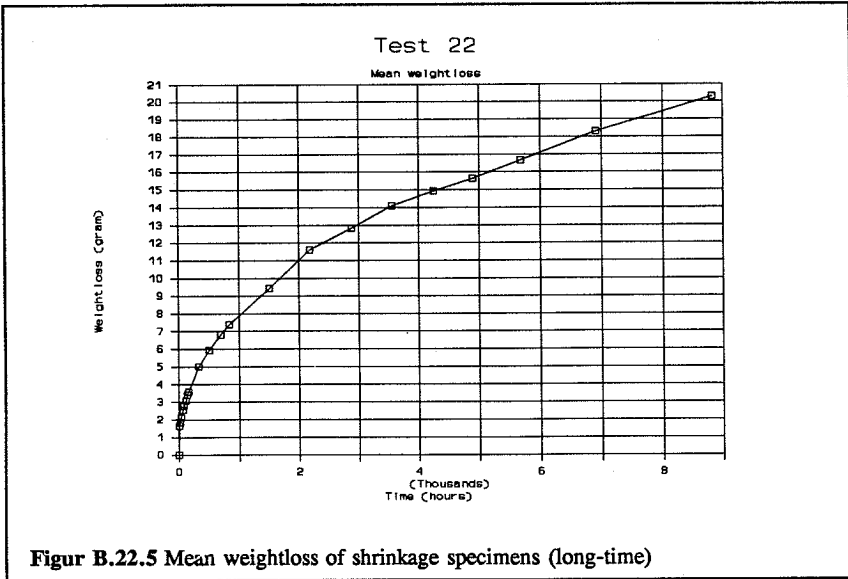


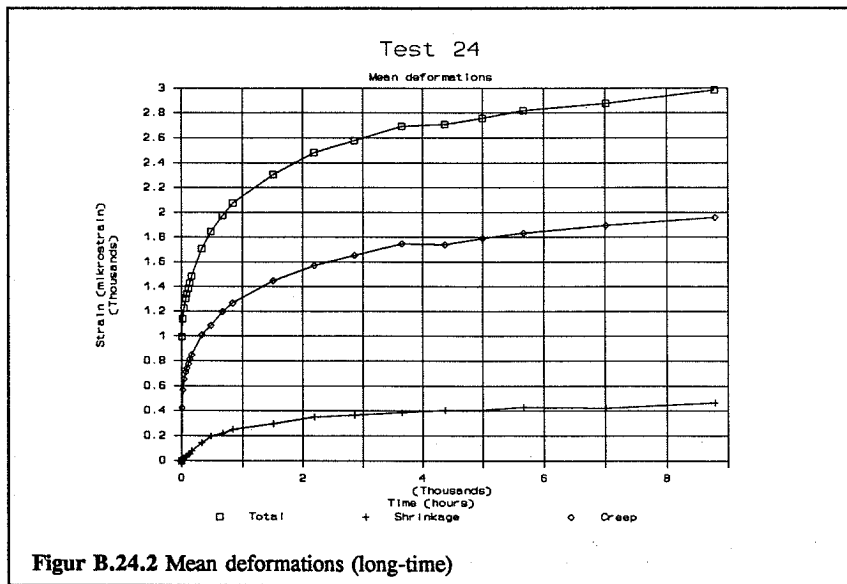
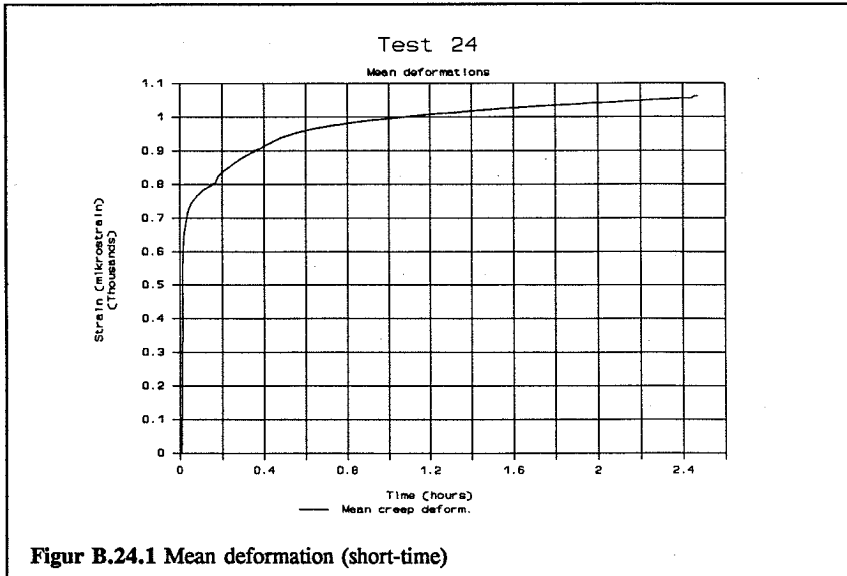


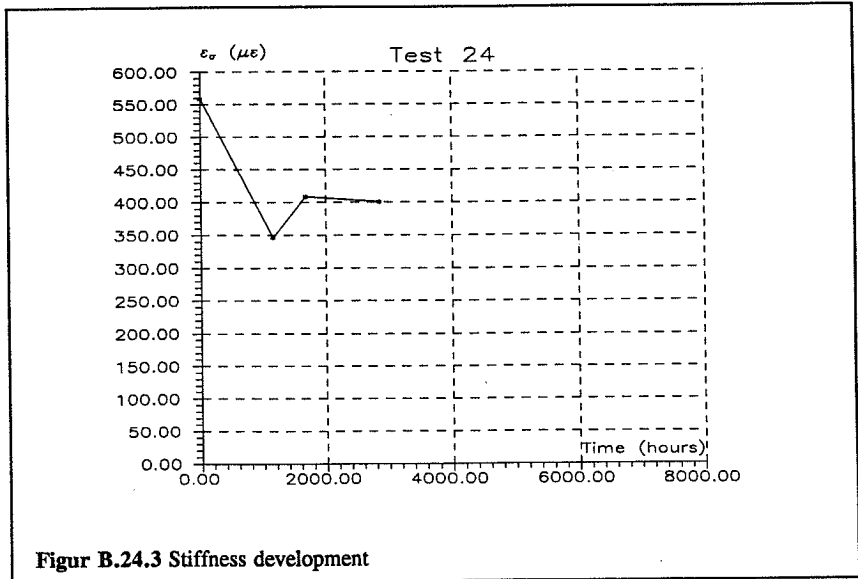
Figur B.22.3 Stiffness development



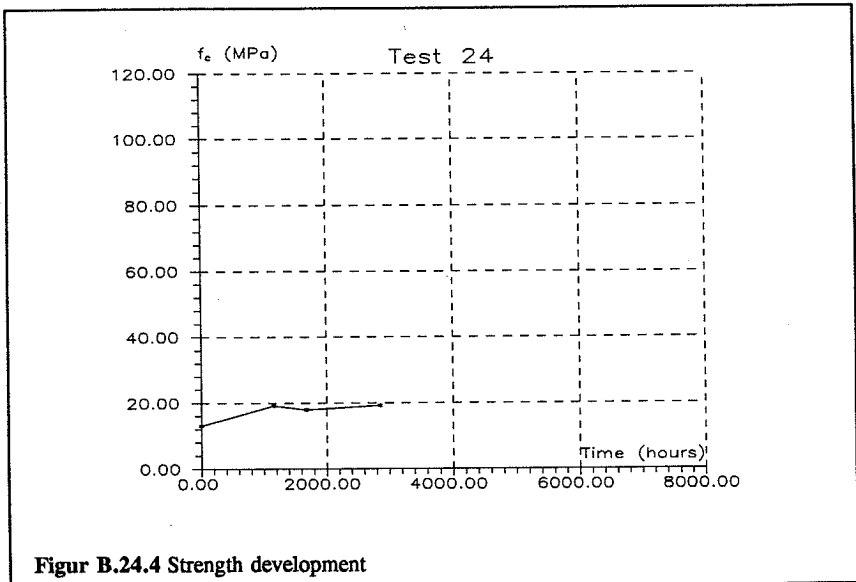
Figur B.22.4 Strength development





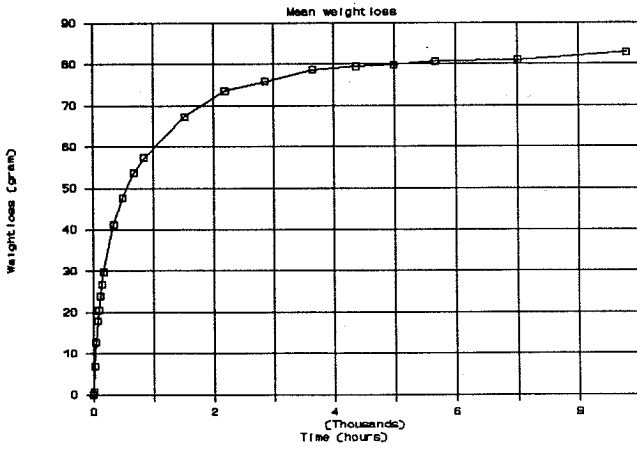


Figur B.24.3 Stiffness development

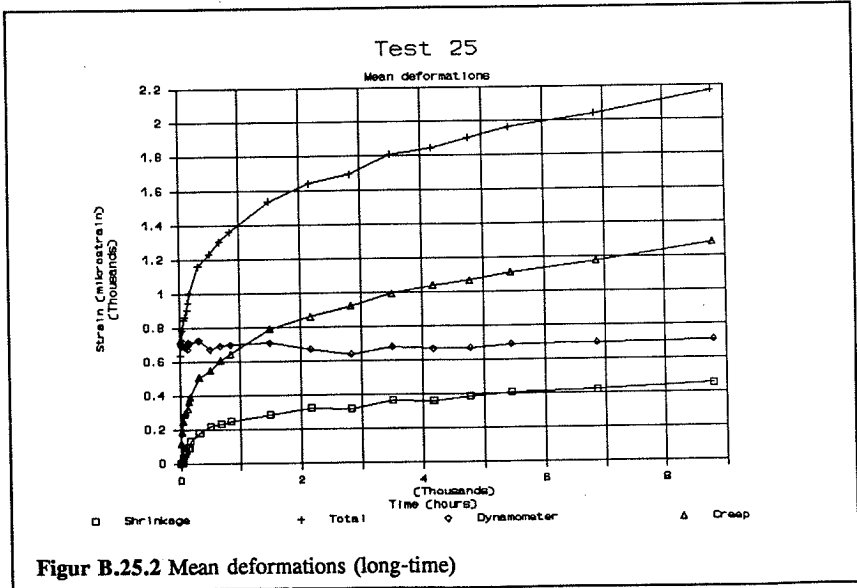
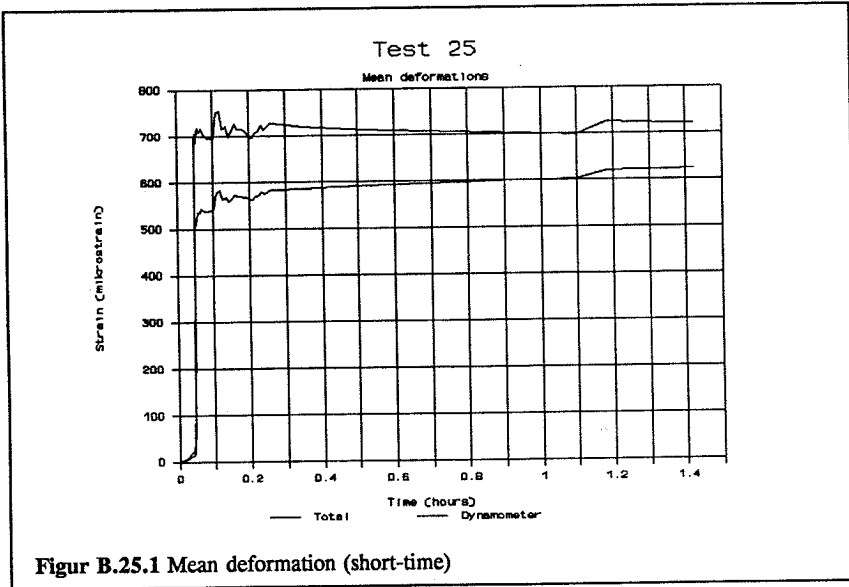


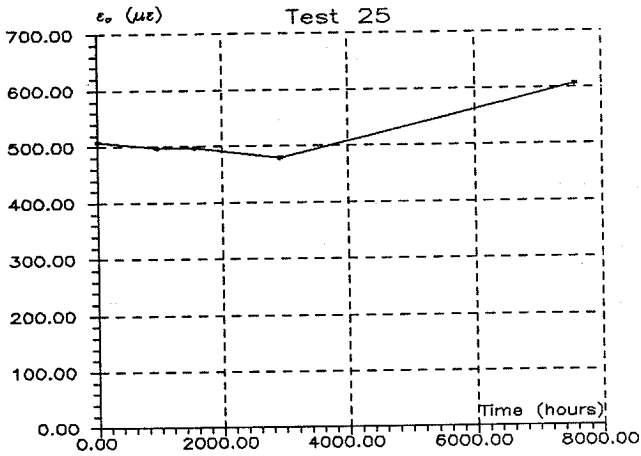
Figur B.24.4 Strength development

### Test 24

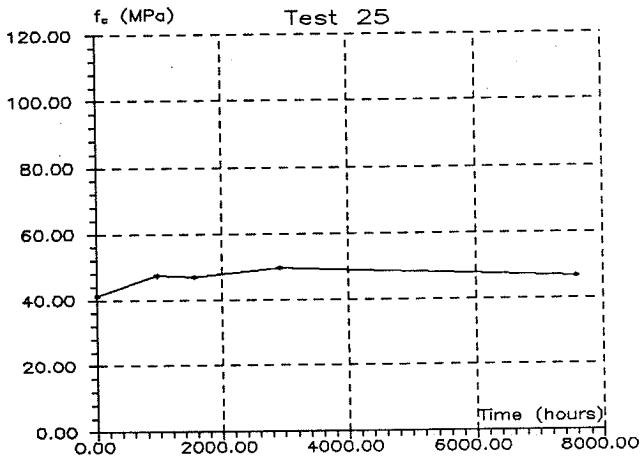


Figur B.24.5 Mean weightloss of shrinkage specimens (long-time)



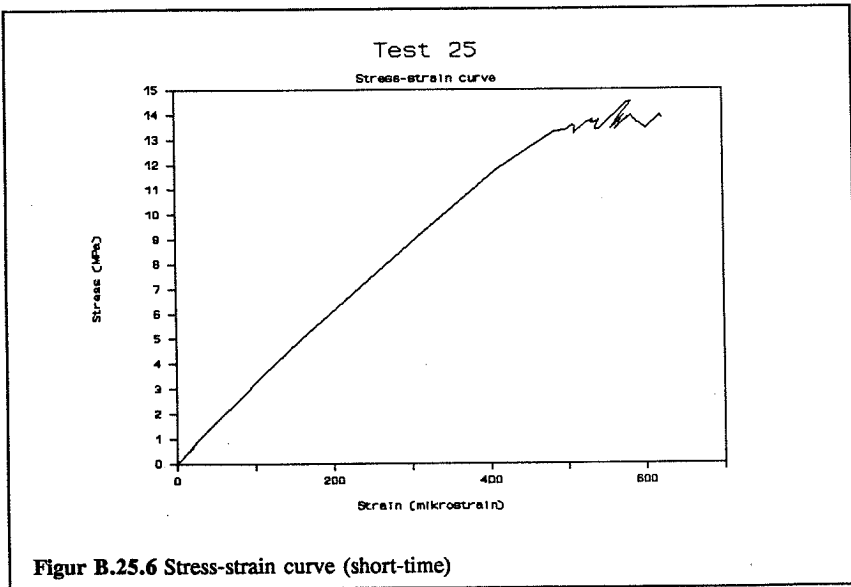
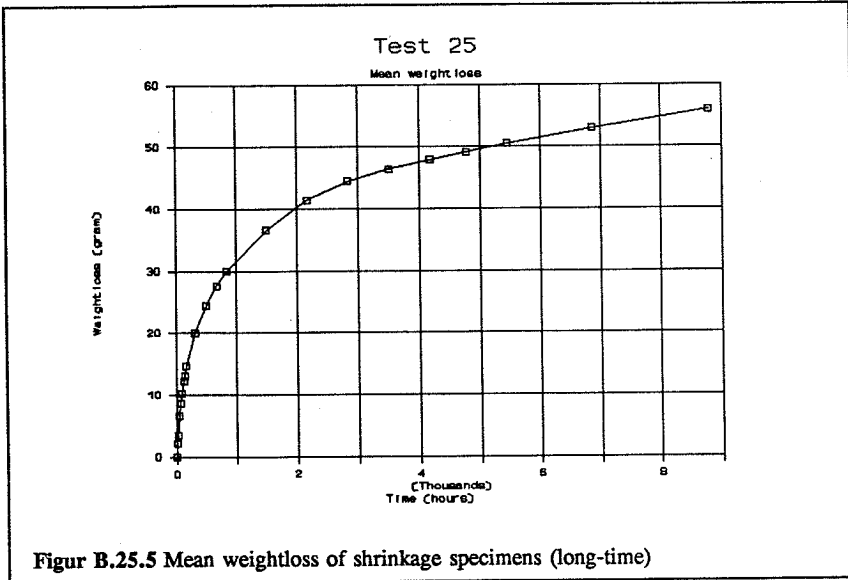


Figur B.25.3 Stiffness development



Figur B.25.4 Strength development





### Test 26

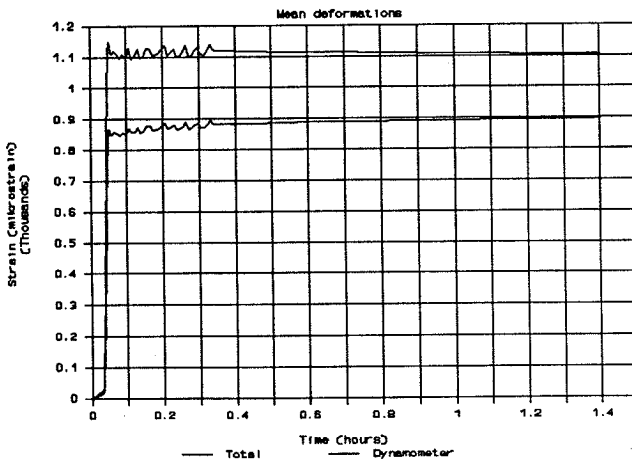


Figure B.26.1 Mean deformation (short-time)

### Test 26

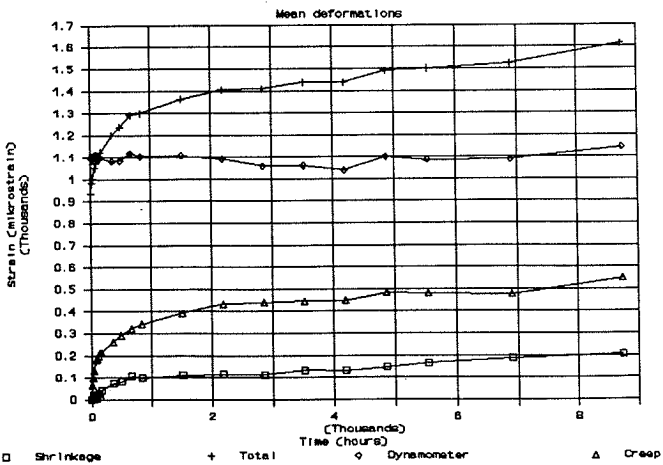
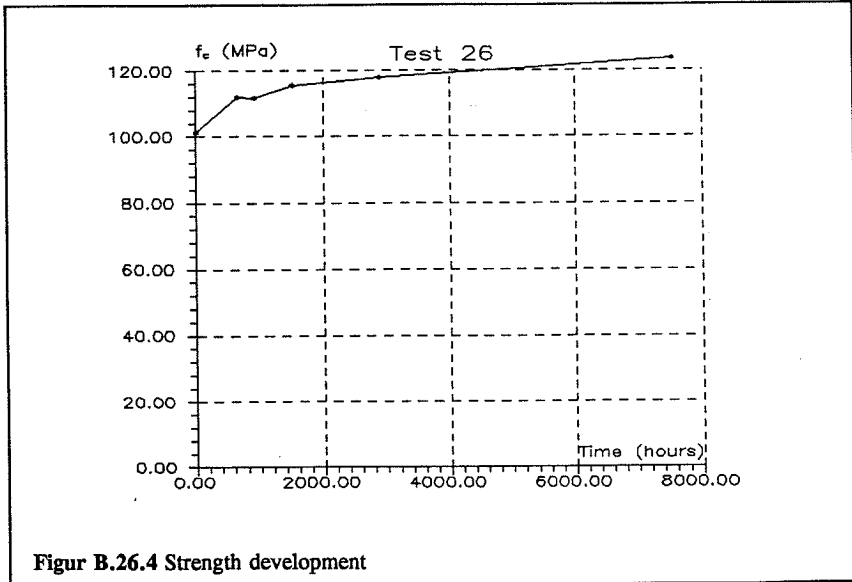
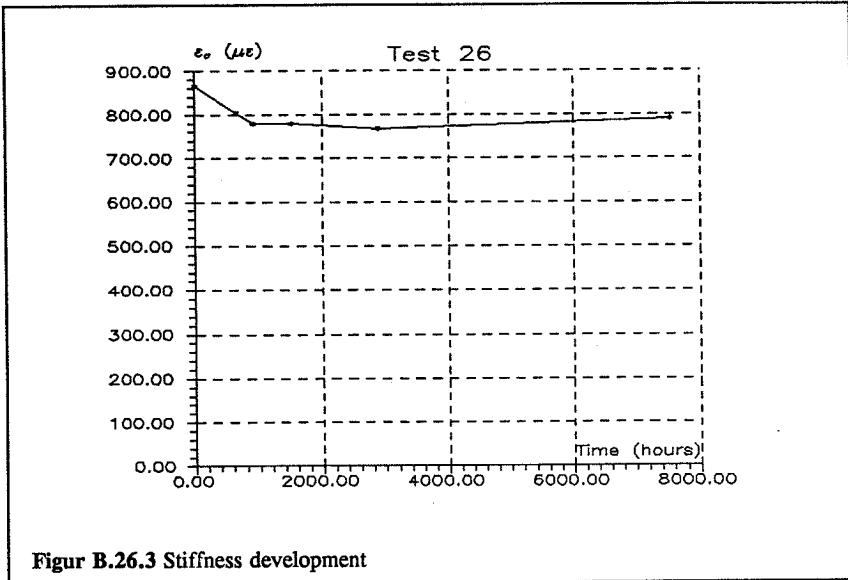
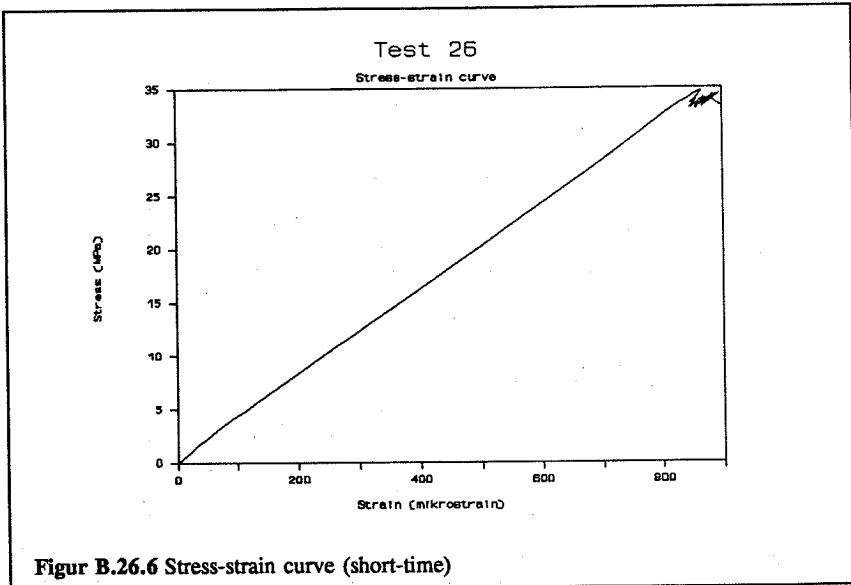
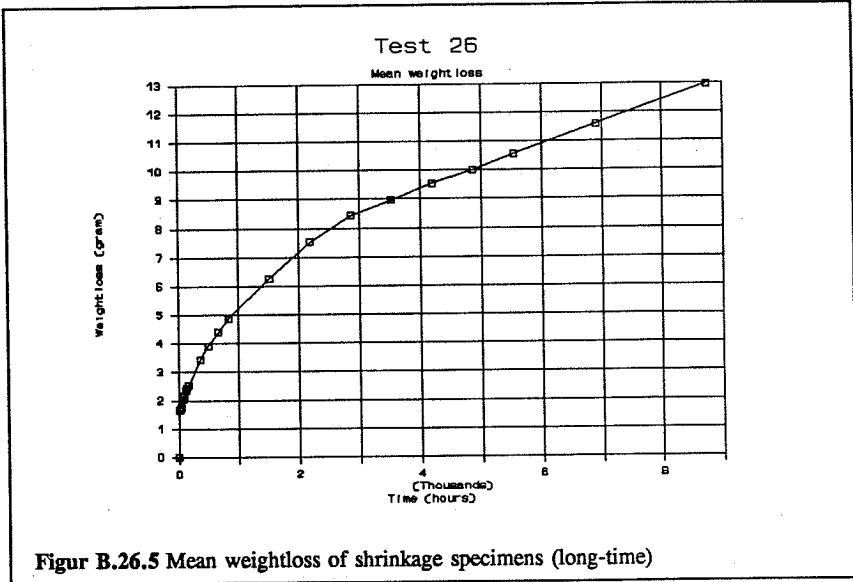


Figure B.26.2 Mean deformations (long-time)





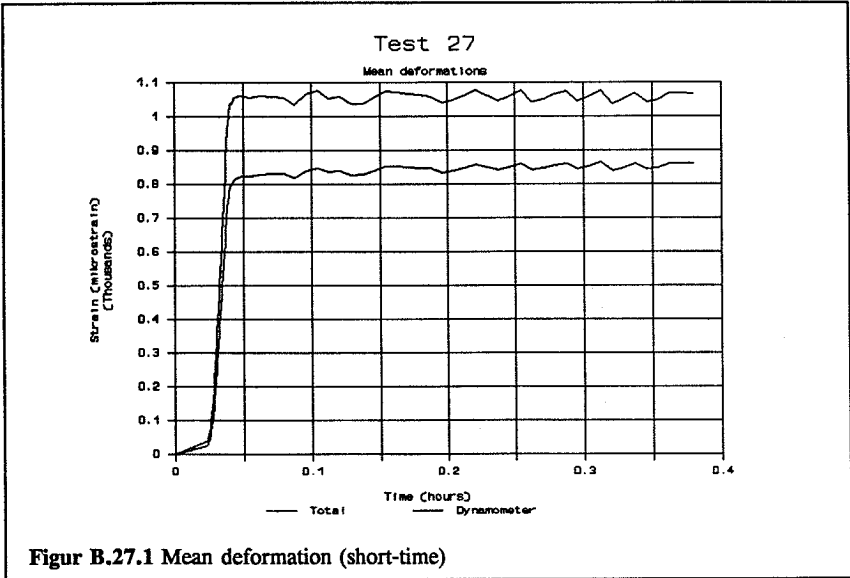


Figure B.27.1 Mean deformation (short-time)

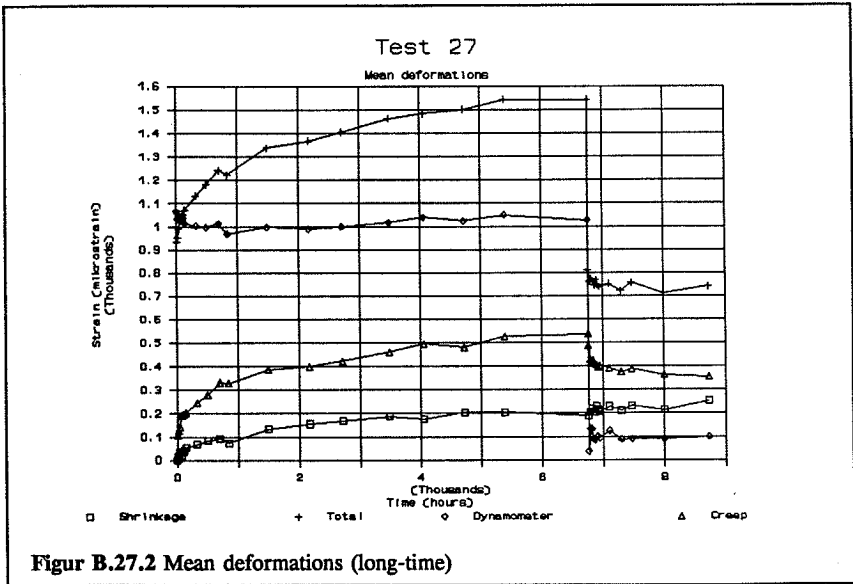
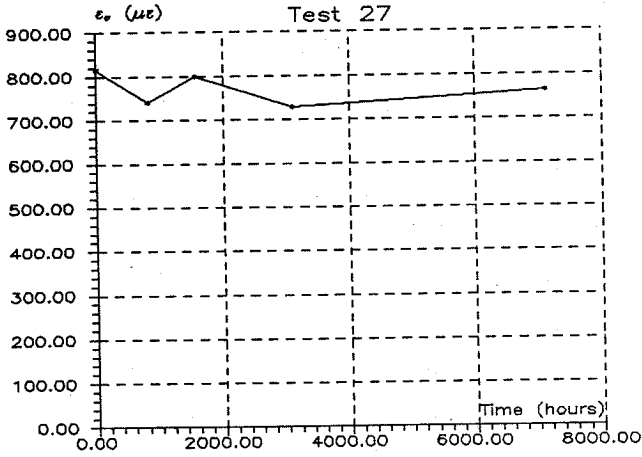
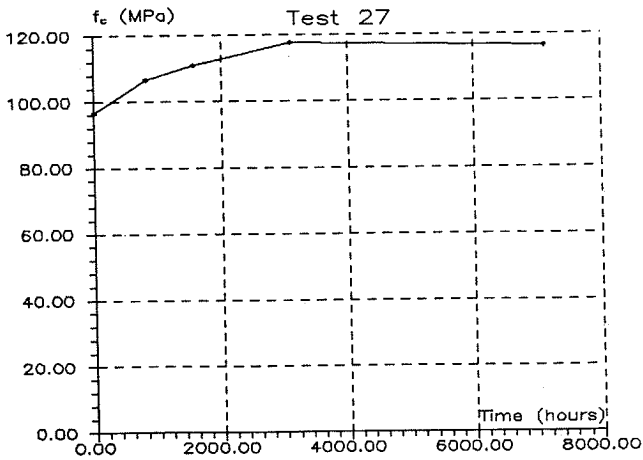


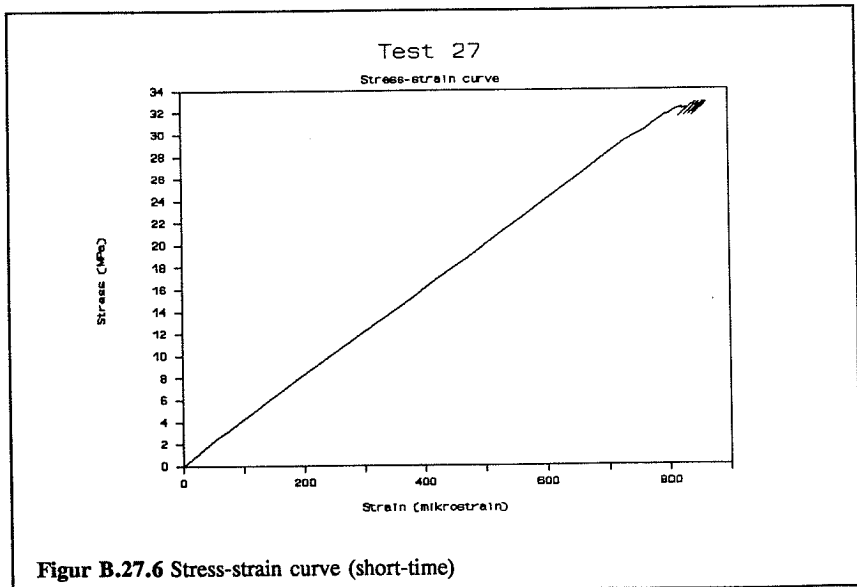
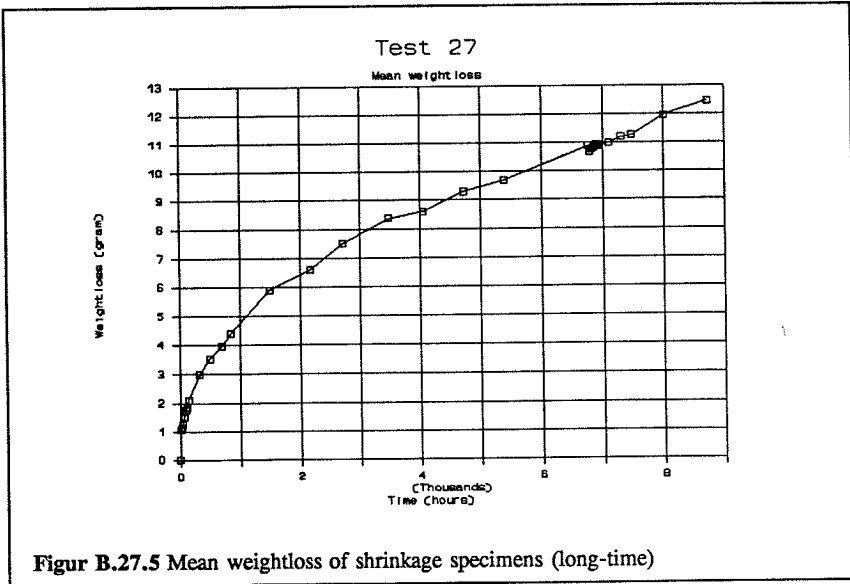
Figure B.27.2 Mean deformations (long-time)

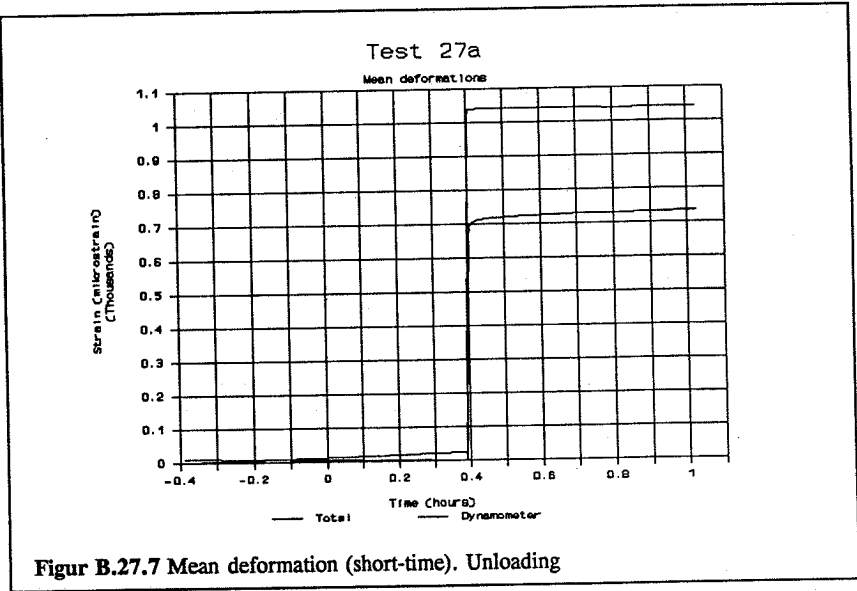


Figur B.27.3 Stiffness development

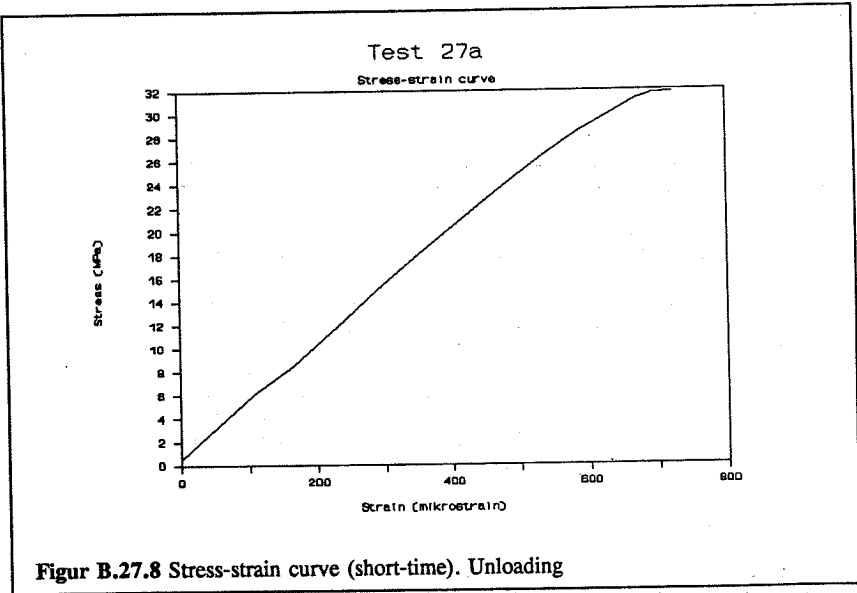


Figur B.27.4 Strength development



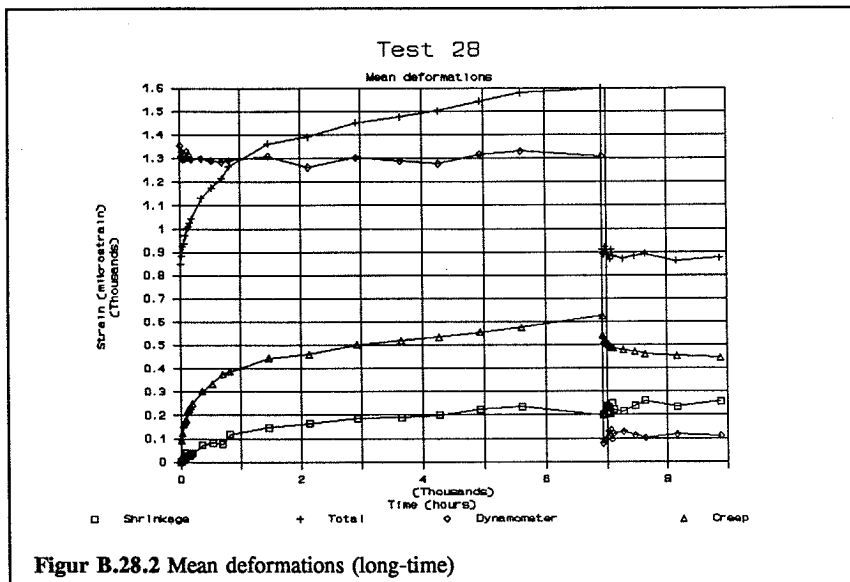
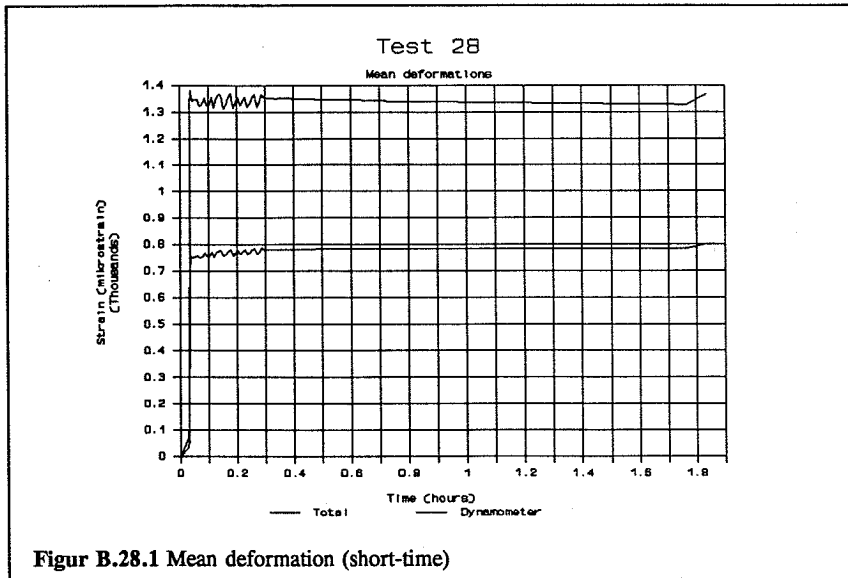


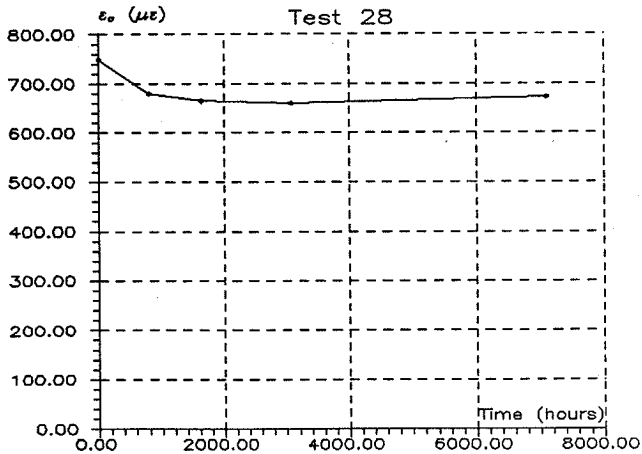
**Figure B.27.7** Mean deformation (short-time). Unloading



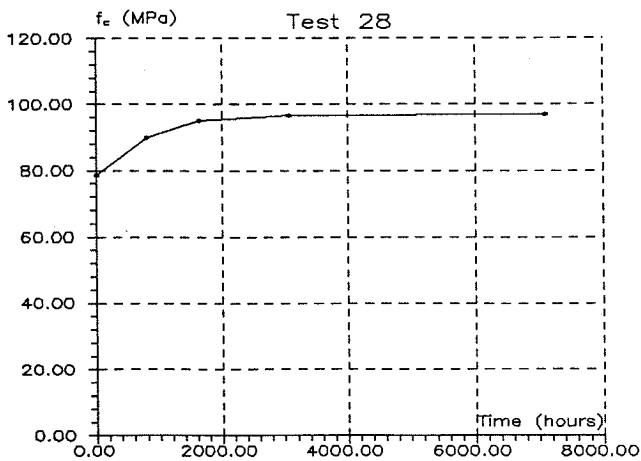
**Figure B.27.8** Stress-strain curve (short-time). Unloading



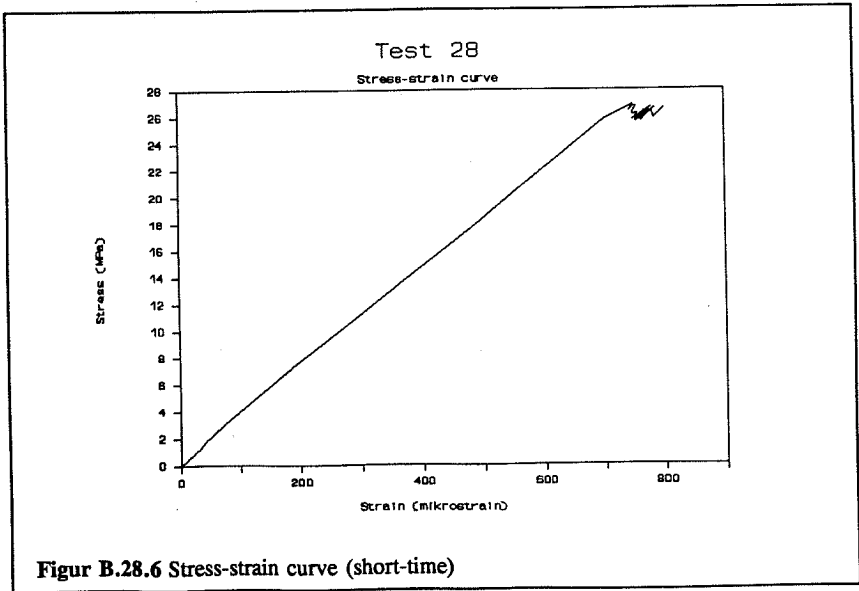
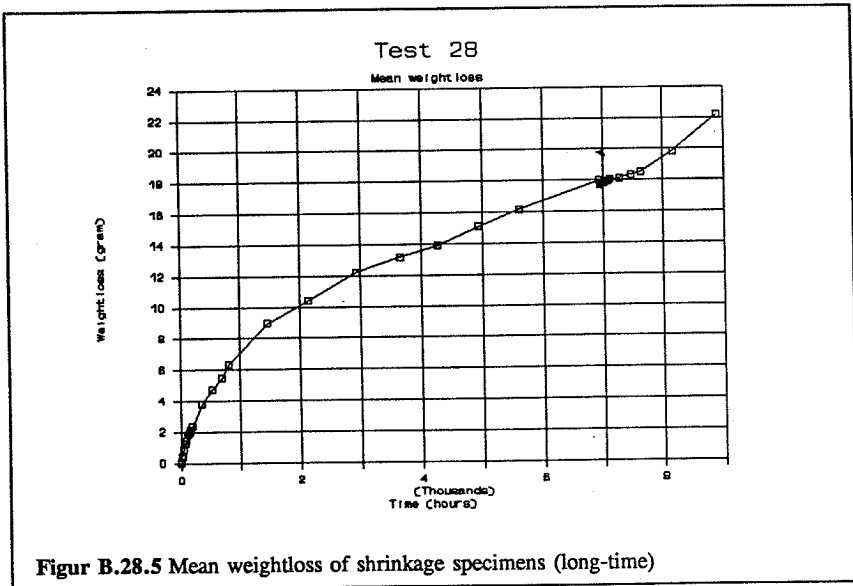


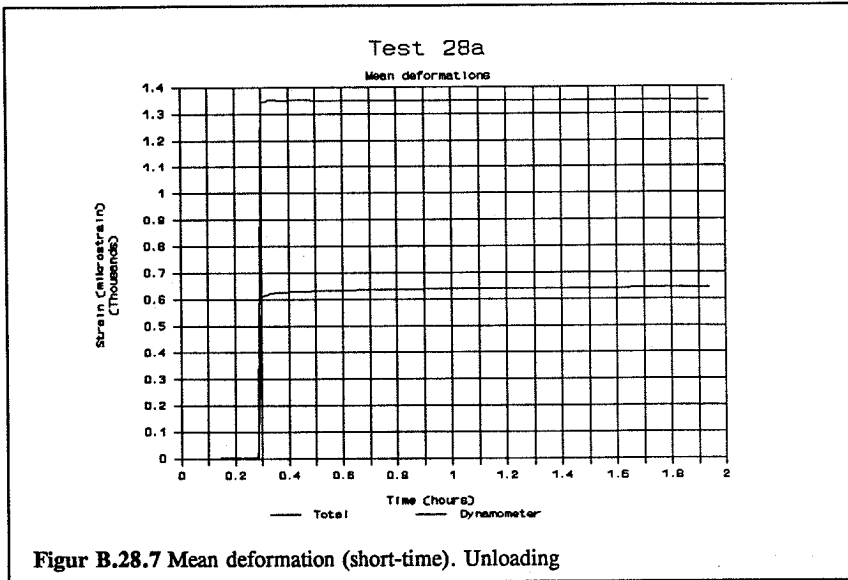


Figur B.28.3 Stiffness development

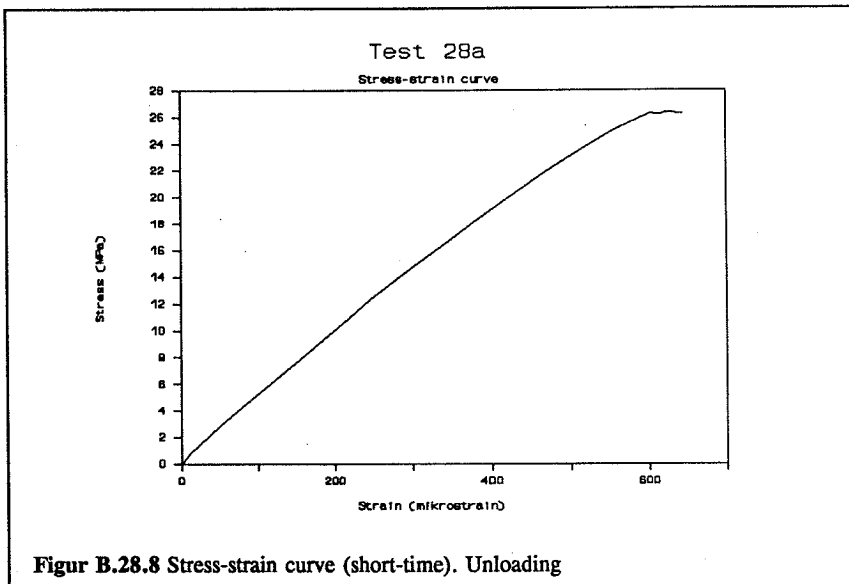


Figur B.28.4 Strength development

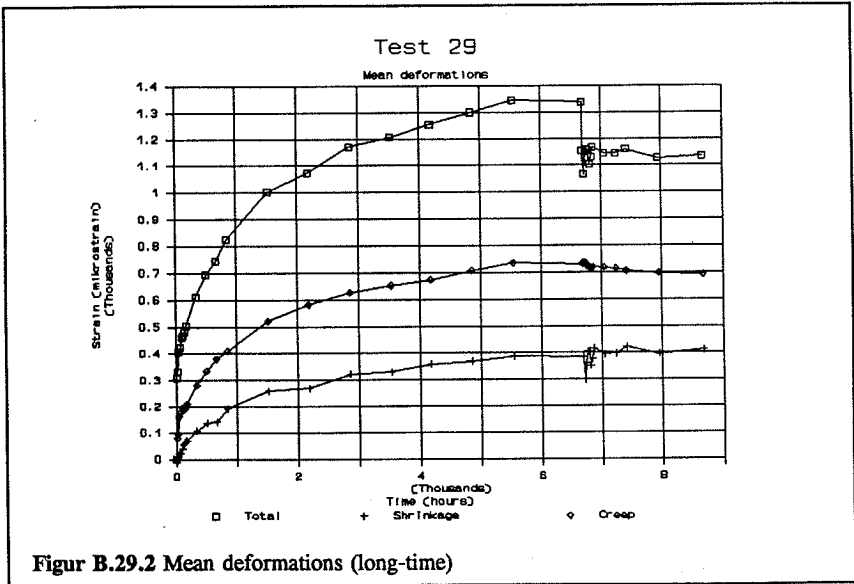
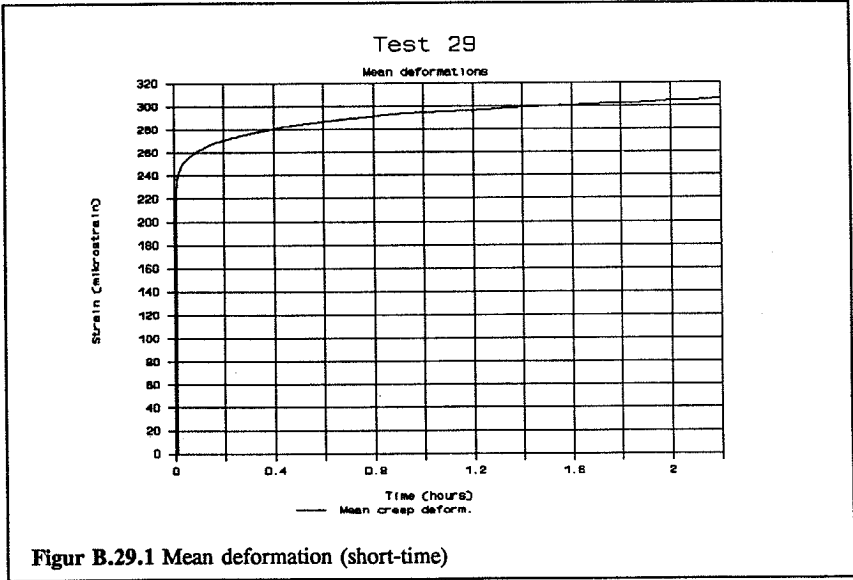


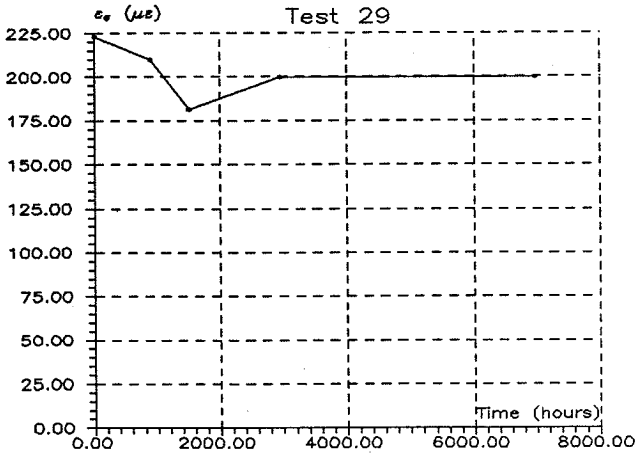


**Figure B.28.7** Mean deformation (short-time). Unloading

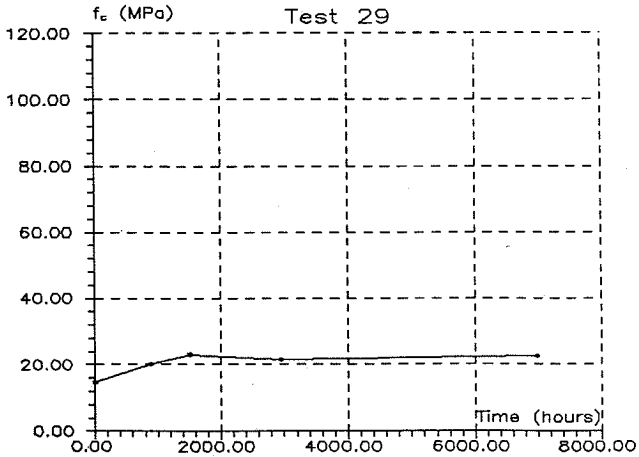


**Figure B.28.8** Stress-strain curve (short-time). Unloading

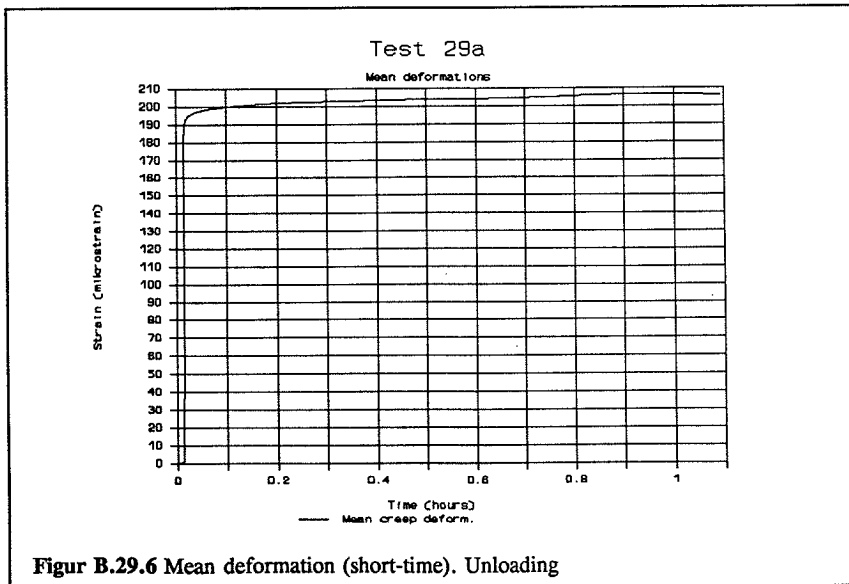
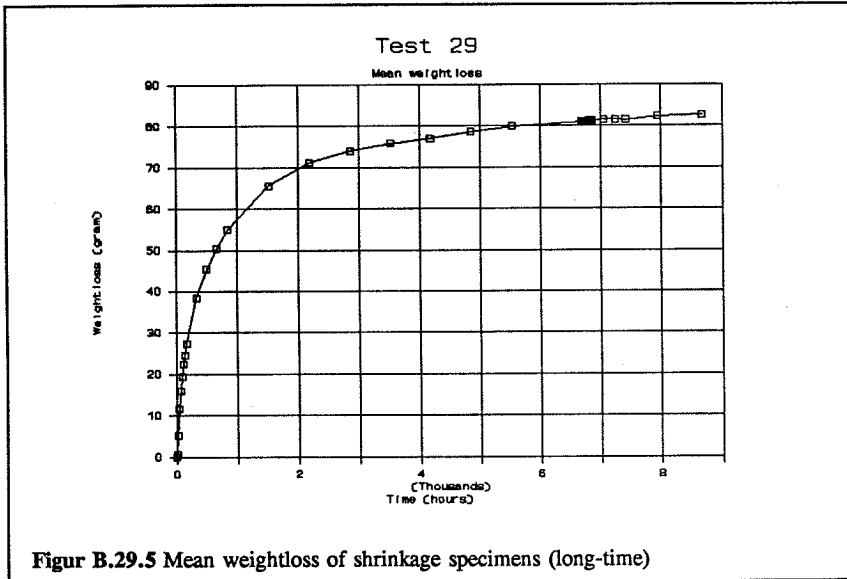




Figur B.29.3 Stiffness development



Figur B.29.4 Strength development



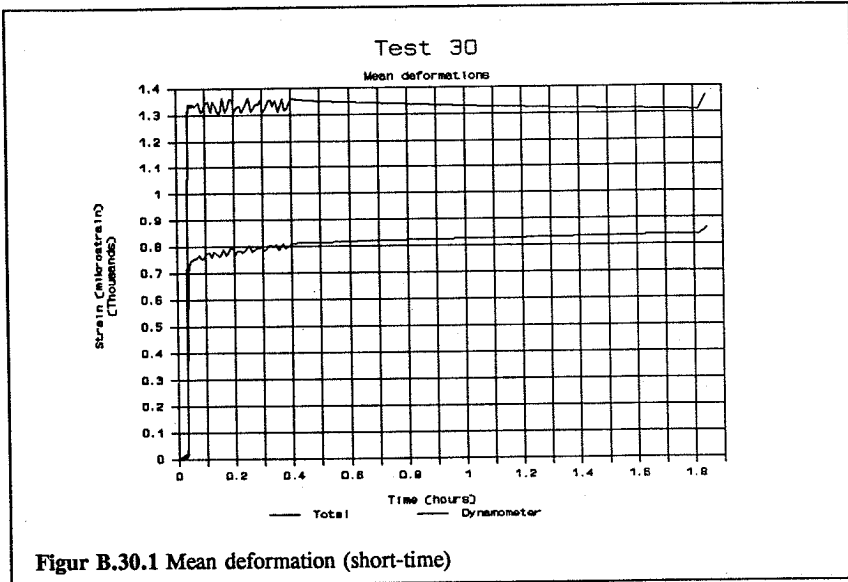


Figure B.30.1 Mean deformation (short-time)

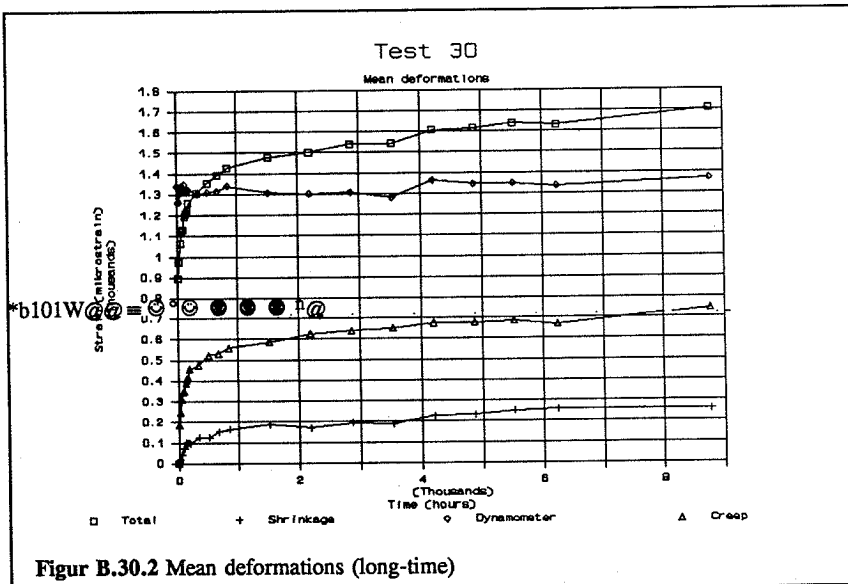
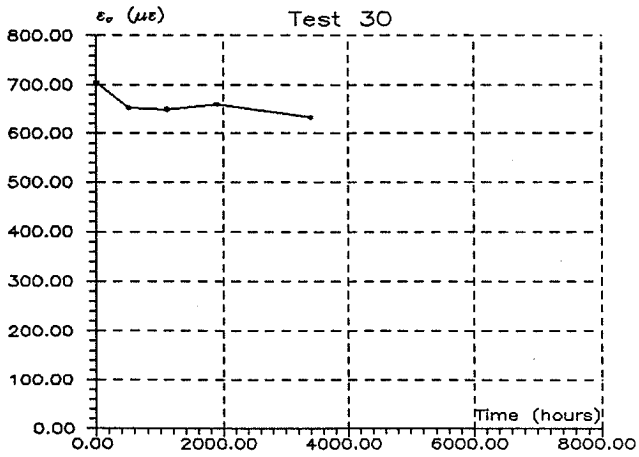
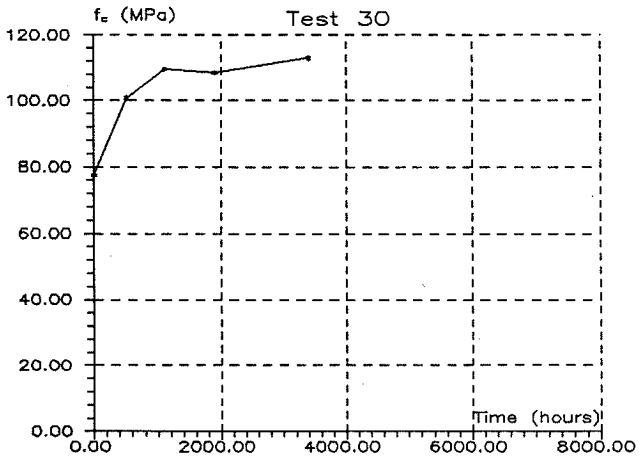


Figure B.30.2 Mean deformations (long-time)





Figur B.30.3 Stiffness development



Figur B.30.4 Strength development

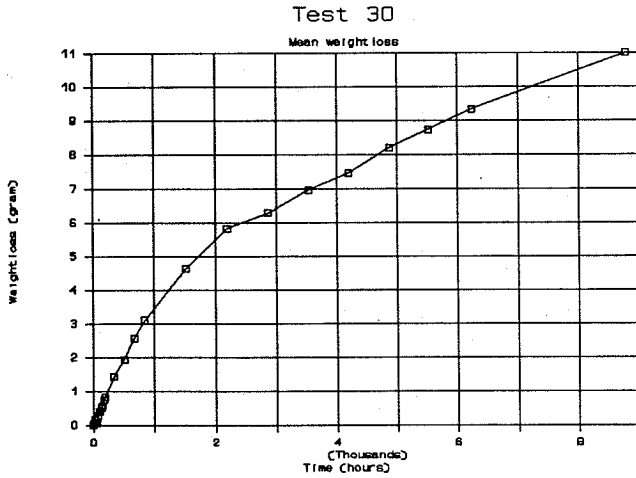


Figure B.30.5 Mean weight loss of shrinkage specimens (long-time)

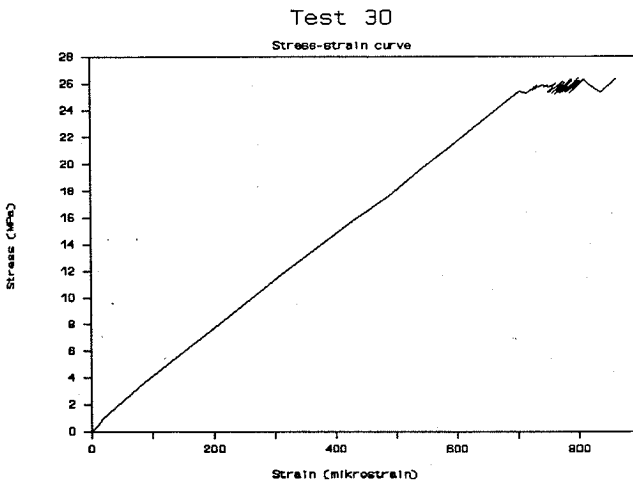
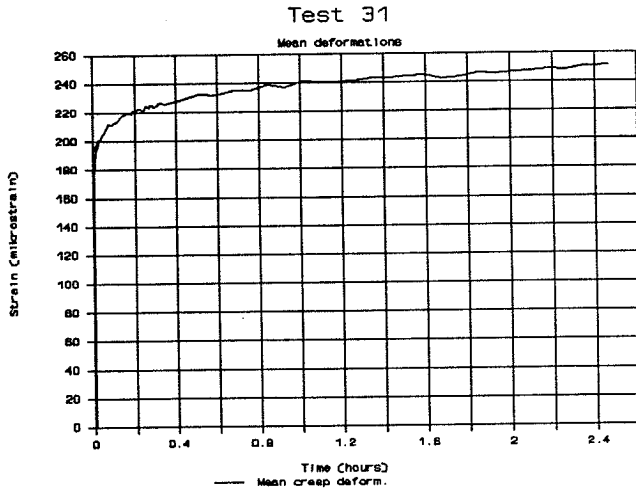
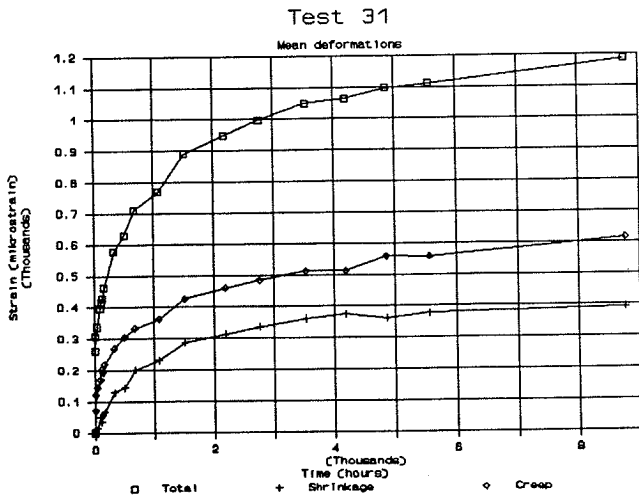


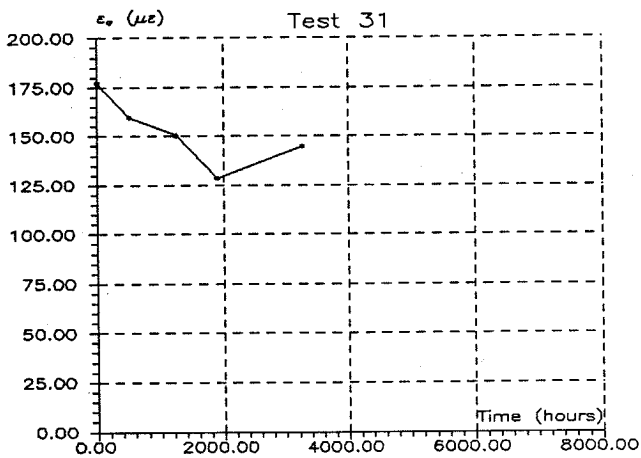
Figure B.30.6 Stress-strain curve (short-time)



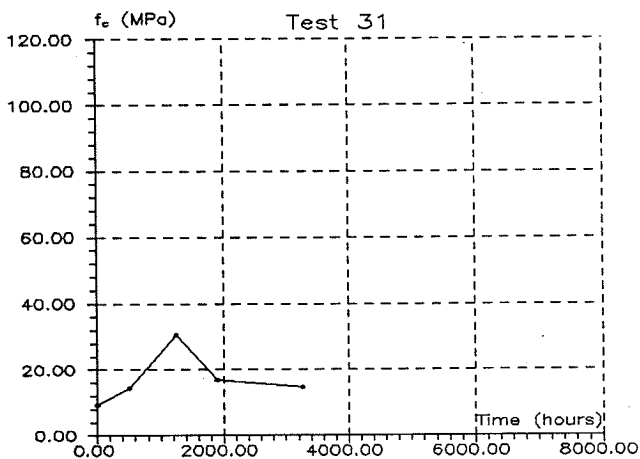
Figur B.31.1 Mean deformation (short-time)



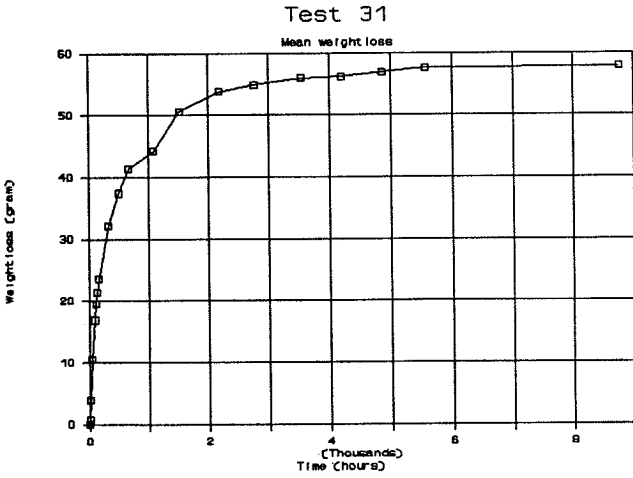
Figur B.31.2 Mean deformations (long-time)



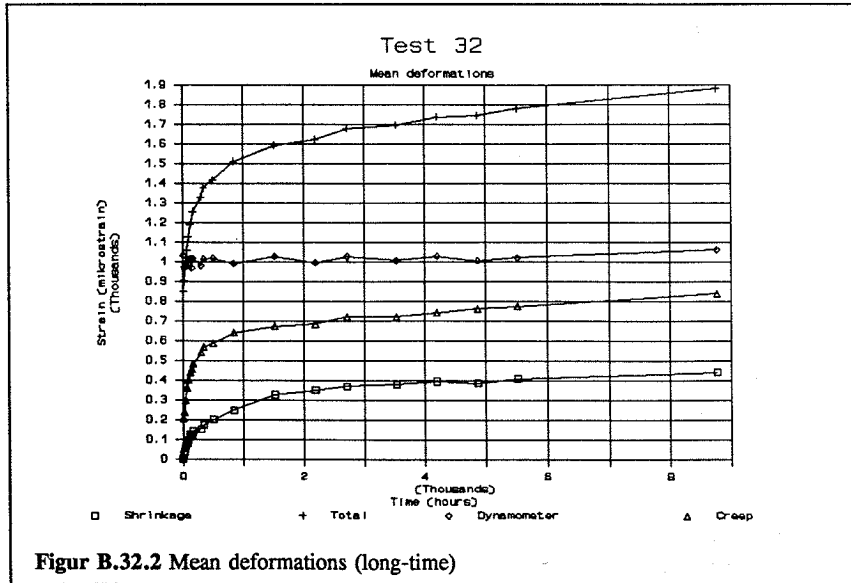
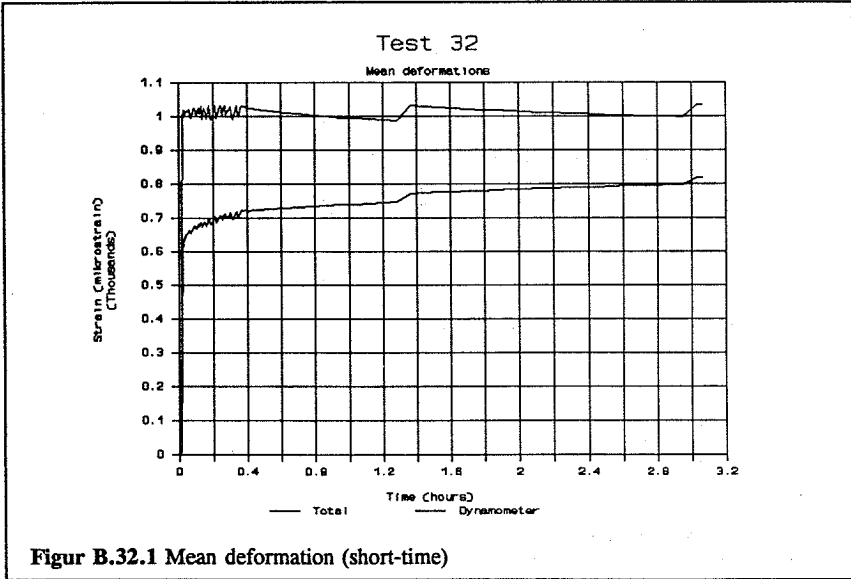
Figur B.31.3 Stiffness development

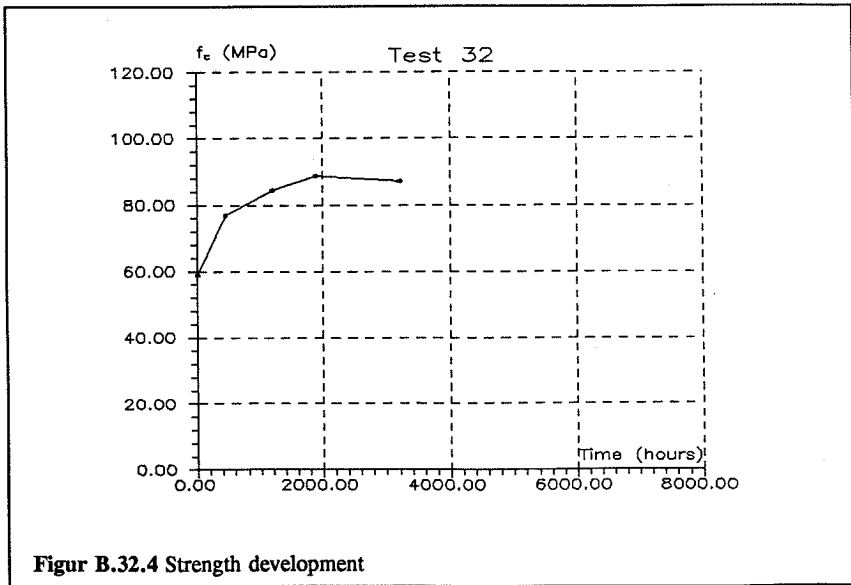
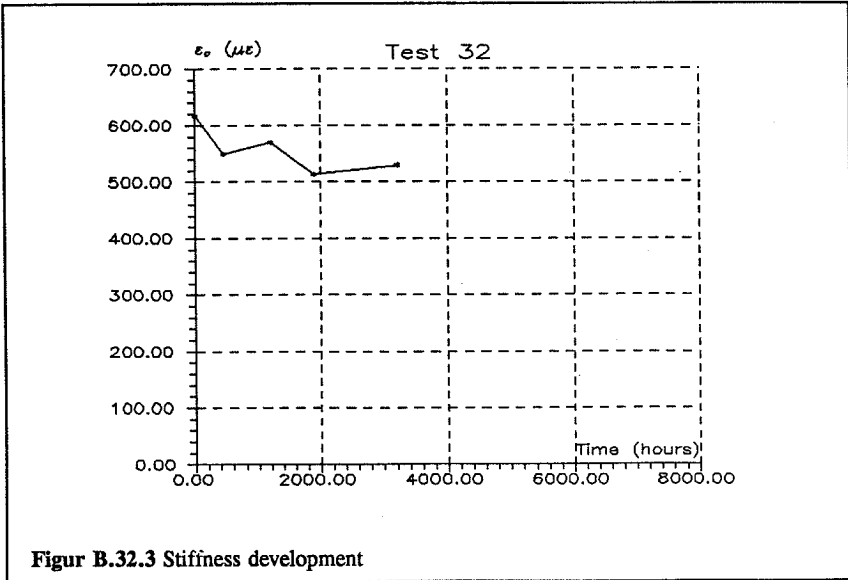


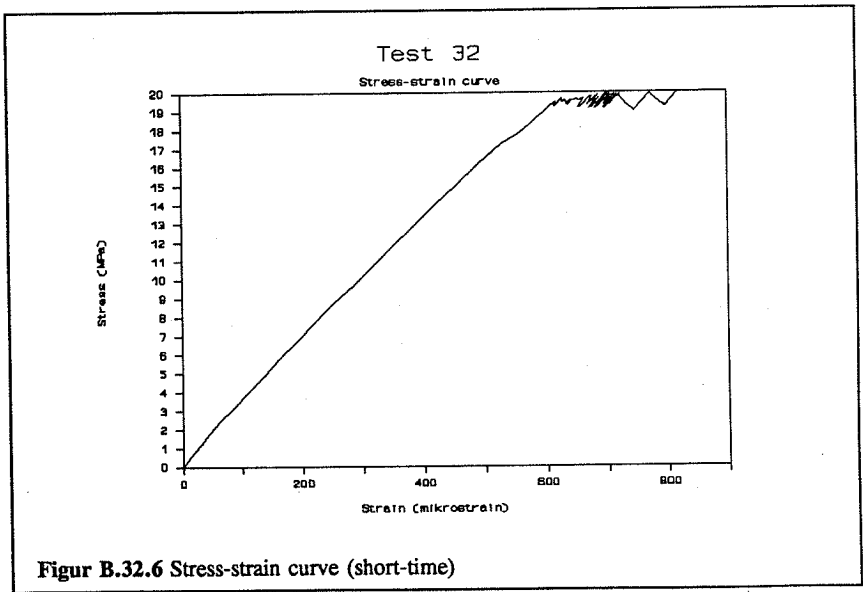
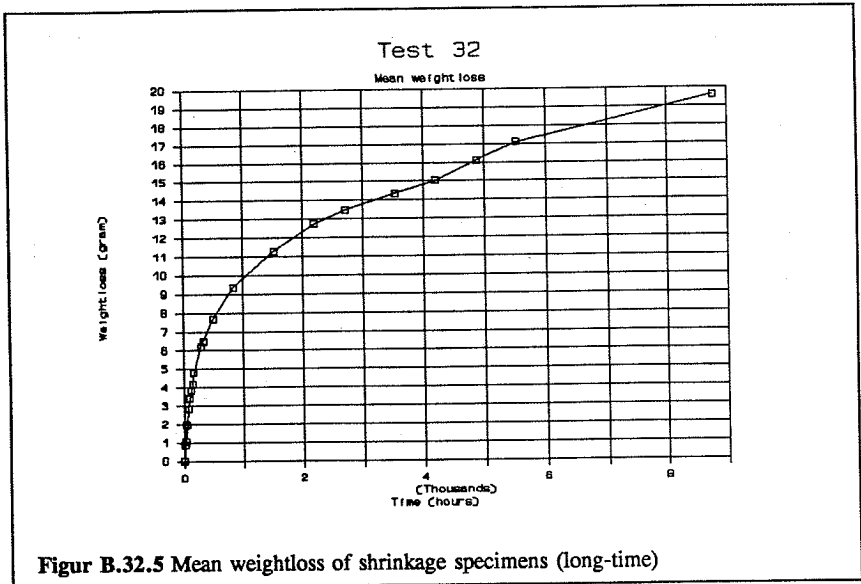
Figur B.31.4 Strength development



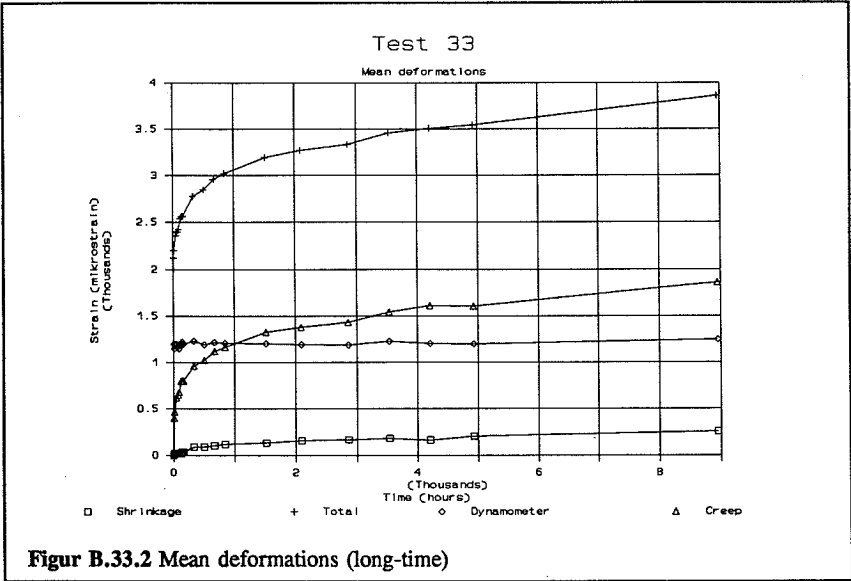
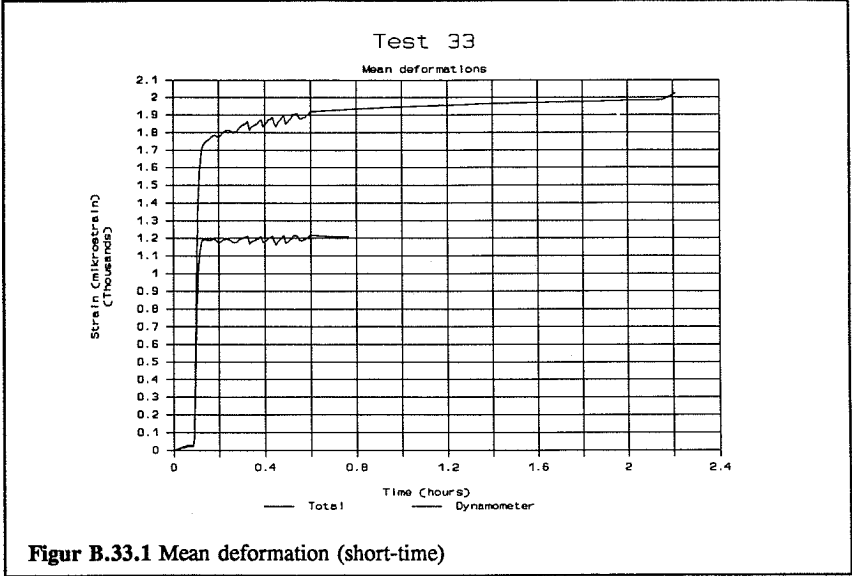
**Figur B.31.5 Mean weightloss of shrinkage specimens (long-time)**

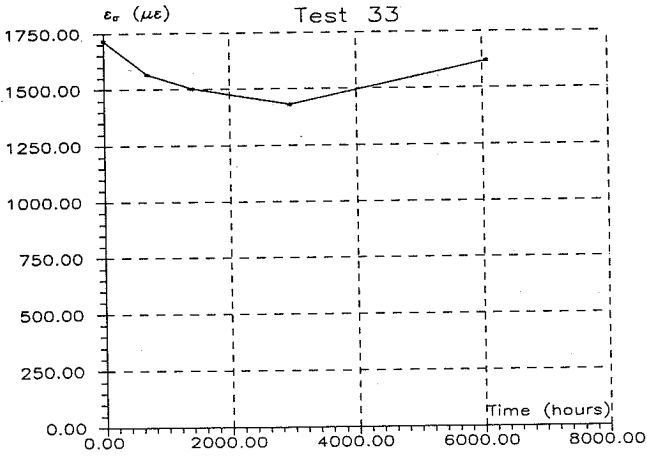




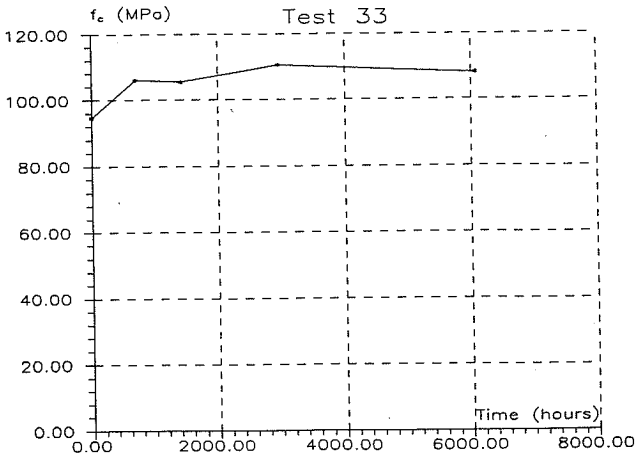




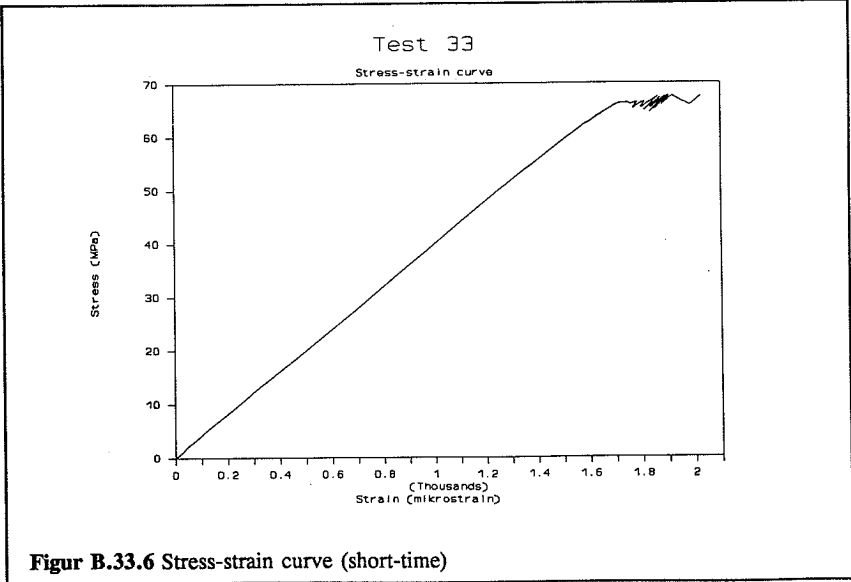
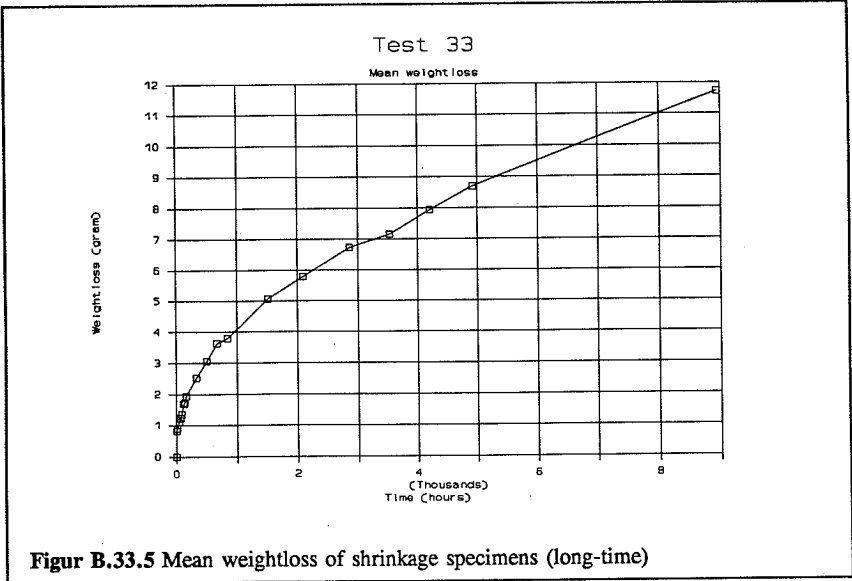


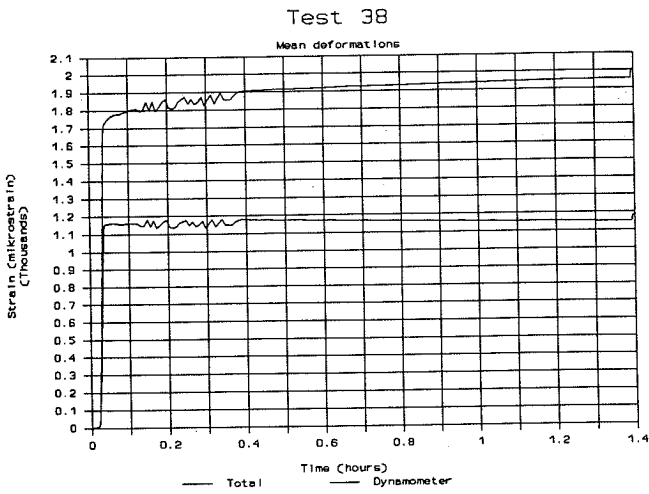


**Figur B.33.3** Stiffness development

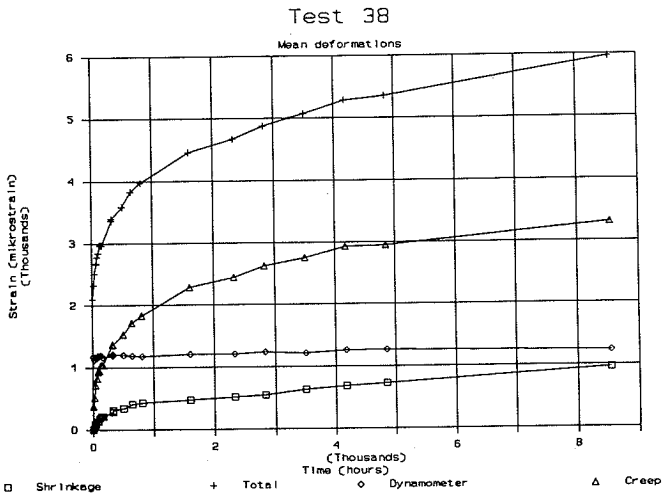


**Figur B.33.4** Strength development

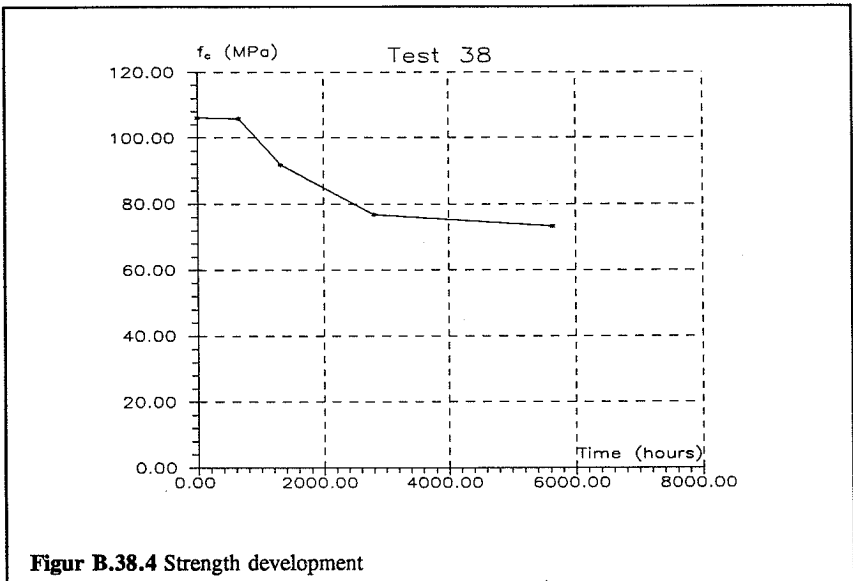
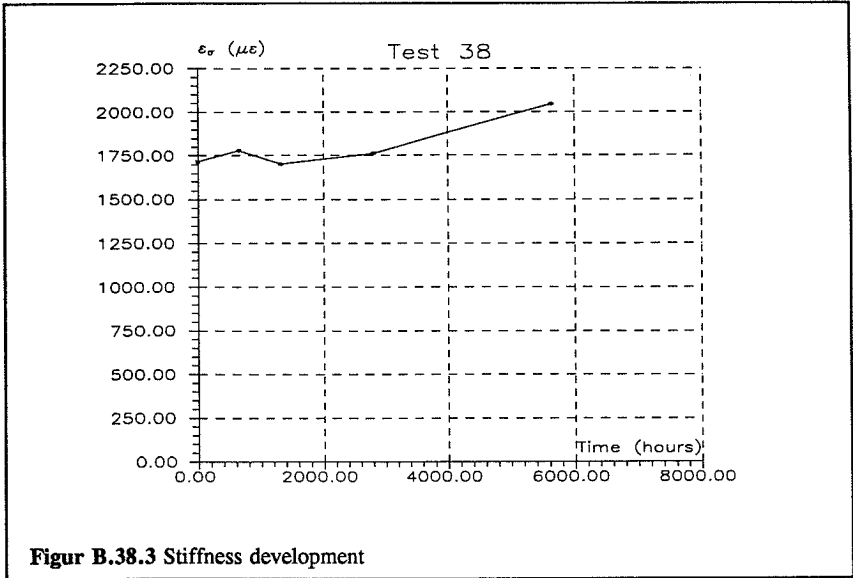


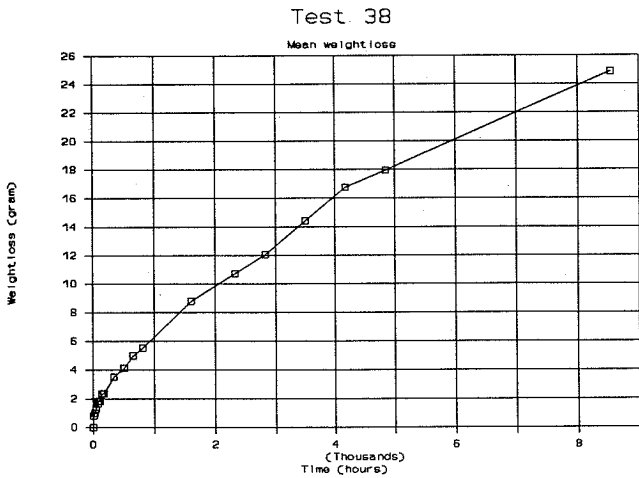


Figur B.38.1 Mean deformation (short-time)

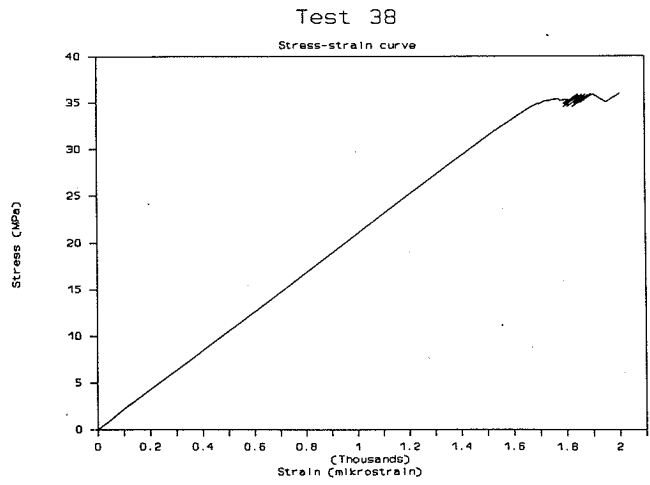


Figur B.38.2 Mean deformations (long-time)

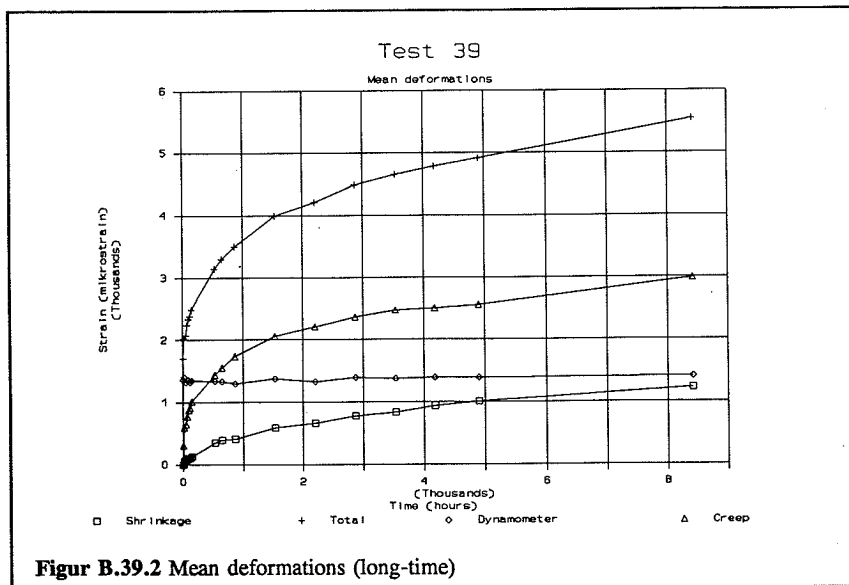
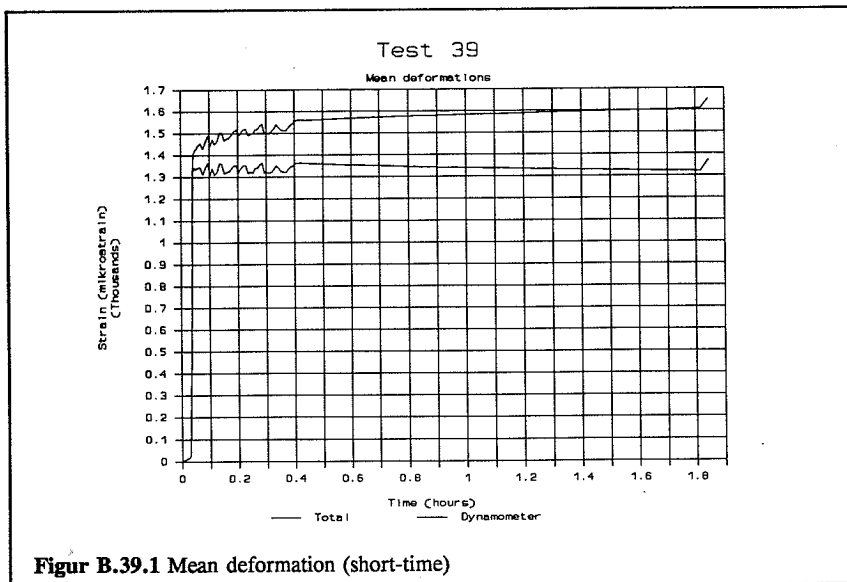


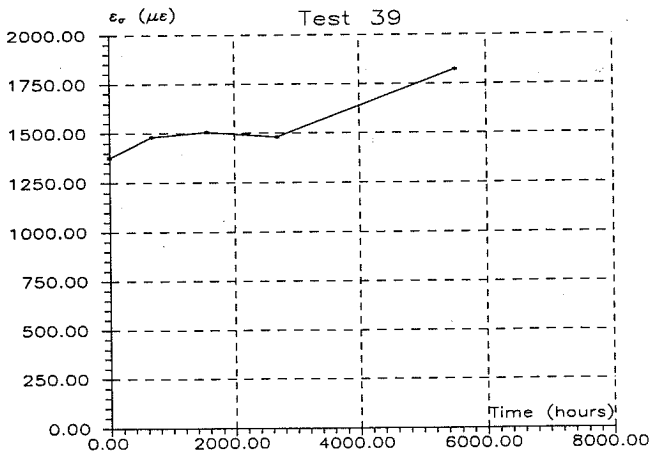


**Figure B.38.5** Mean weightloss of shrinkage specimens (long-time)

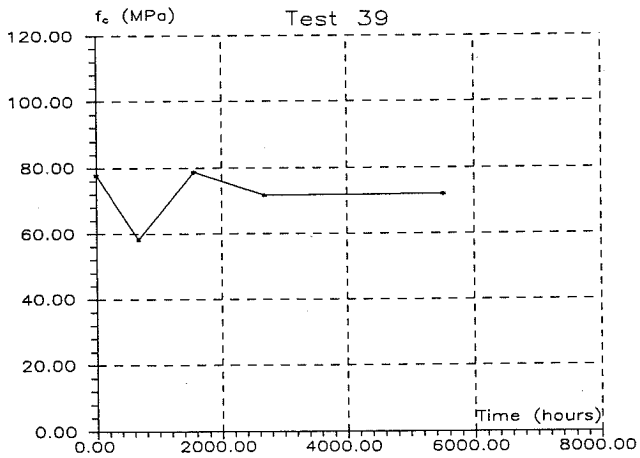


**Figure B.38.6** Stress-strain curve (short-time)



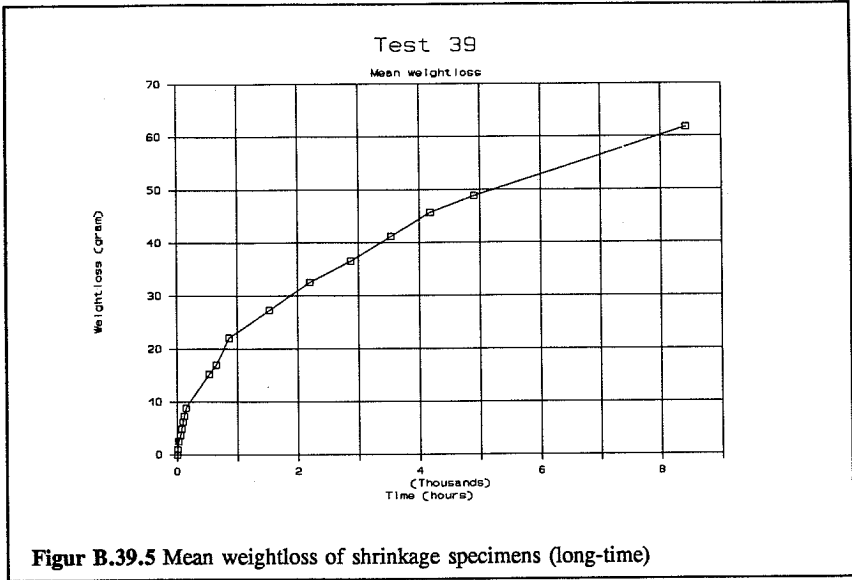


**Figur B.39.3** Stiffness development

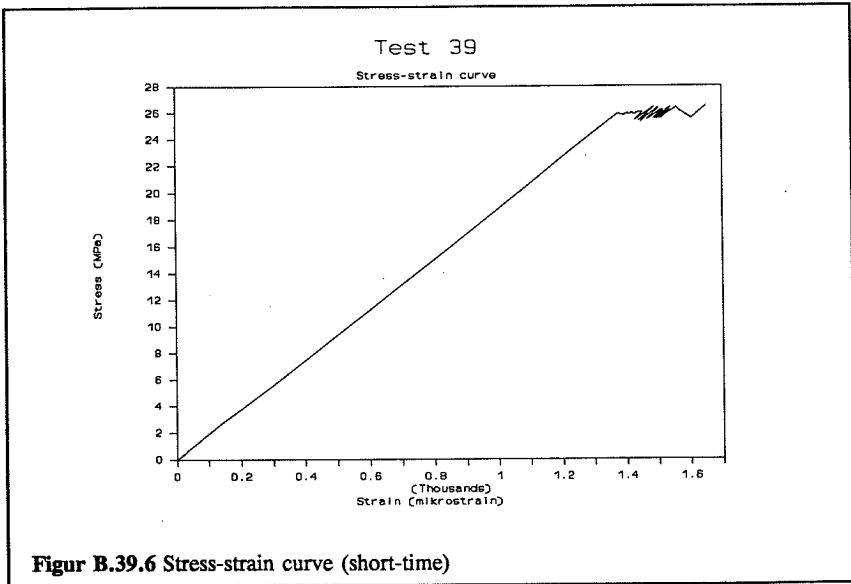


**Figur B.39.4** Strength development





**Figure B.39.5** Mean weightloss of shrinkage specimens (long-time)



**Figure B.39.6** Stress-strain curve (short-time)