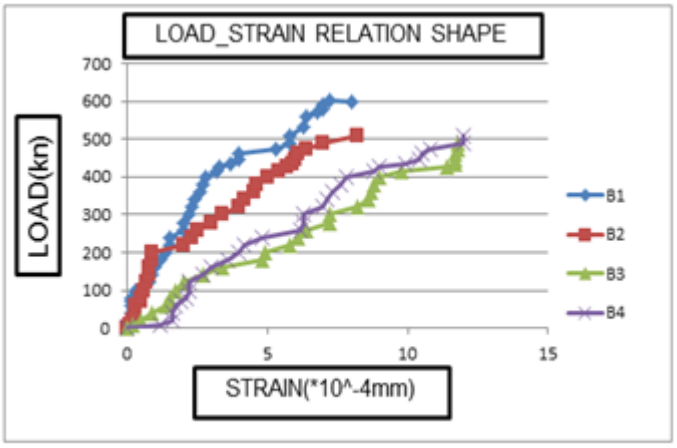


Figure (4.4) load-maximum concrete compressive strain curve of wide beams concert

## 5. Conclusions

The following conclusions are drawn from the present study:

1) Mid-depth of steel plate improves shear capacity of wide beam a little in comparison to other ways of reinforcing and the failure comes to be sudden failure under this kind of reinforcement.
2) Using some steel plate causes increased shear capacity of wide beams significantly that in combination with stirrups there is increase in load capacity as well as ductility.
3) Load carrying after first shear crack and displacement in wide beams using independent steel plate becomes larger in comparison to beams using other types of shear reinforcement that shows a gradual failure and more ductility.
4) Using independent steel plate in wide beams that need a large number of flexural reinforcement provides anchorage feasibility and is much easier than providing stirrup legs in cross sectional area of these beams.
5) Increasing the tension of steel reinforcement area of wide beam an increase of the ultimate load capacity by about (30% to 40%) is observed.
6) The steel plate resistance to crack width where at load (420 kN) observes the crack width in (B1, B2, B3) equal to (0.12, 0.20, 0.16) mm respectively while (B1) controller spacemen equal to (0.46) mm.

## References

[1] **1.Abbas, A. A.; Pullen, A.** D,**and Cotsovos,** D. M,(2010),"Structural Response of RC Wide Beams Under Low-Rate and Impact Loading," 'Magazine of Concrete R**esearch,V.**62,No. 10,**723-740.**
[2] **ACI Committee 318, (2011)**"Building Code Requirements for Structural Concrete, (ACI 318M-11) and commentary (318R-11)," American Concrete Institute, Farmington Hills, Michigan, USA, 503 pp.
[3] **Haidar.r.hashimal.dywany,(2010),"behaviour of wide reinforced concrete beam in shear**"
[4] **Lubell, A. S.; Bentz, E. C ; andCollins, M. P, (2009),** "Shear reinforcement spacing in wide members," ACI Structural Journal, V. 106, No. 2, March-April pp. 205-214.
[5] **Mohammadyan-Yasouj,S. E., (2012),** "The Influence of Different Types and arrangements of Reinforcement on Capacity of Concrete Wide Beams," Master Research Report, Universiti Teknologi Malaysia, Johor, Malaysia, December.