
**Timber structures — Timber
connections and assemblies —
Determination of yield and ultimate
characteristics and ductility from test
data**

*Structures en bois — Assemblages et composants bois —
Détermination des caractéristiques limites et ultimes et de la ductilité
à partir des données d'essai*





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Foreword

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Introduction

Timber shows generally brittle failure in tension and bending. This characteristic of wood may cause serious damage to buildings due to the lack of energy dissipation during an earthquake. To avoid such damage, it is expected that the joints connecting wooden members dissipate seismic energy instead of the members themselves. Ductility of a structure is one of the most important factors in dissipating seismic energy. In this technical report, the definitions of yield point, ultimate characteristics and ductility factor used in various test standards are reviewed and methods of determining these characteristics from quasi-static and reversed-cyclic loading test data are compared.

Better fits to envelope curves derived from testing, such as more detailed piecewise linearization are permissible, and indeed desirable for whole building design. The derived load-deflection inputs to structural analysis programs of the various structural elements are only applicable to the case of assessing the maximum connection forces under earthquake loading and provide no guarantee that a structure will remain stable beyond the ultimate strength of the system.