

Comparative Durability of Canada's "Cedar" Species

All available evidence suggests Western red cedar, Eastern white cedar and Yellow cedar can be considered equivalent in terms of decay resistance.

Four of Canada's many tree species have the appellation Cedar given to them though none are members of the true cedars or *Cedrus* species. Western red cedar *Thuja plicata* Donn (WRC), and Eastern white cedar *Thuja occidentalis* L. (EWC), are species of arbor vitae. Yellow cedar (also known as Alaska cedar or yellow cypress) *Chamaecyparis nootkatensis* (D.Don) Spach. (YC) is a false cypress. Eastern red cedar *Juniperus virginiana* L. (ERC) is a juniper. The name cedar has been applied to these species because of their aromatic and decay-resistant heartwood. The first three of these are commercially important for wood products; Eastern red cedar is a very small tree or shrub growing near lakeshores in Southern Ontario.

All three of the commercially important species are classified as durable on a scale ranging from non-durable through moderately durable, to durable and highly durable. However, strange as it may seem, until recently their durability had not been directly compared in field tests in Canada. Sedziak (1962) quoted an estimated service life of 25+ years for round EWC fence posts based on field tests initiated in 1937 at the Eastern Forest Products Laboratory (now Forintek) test site at Petawawa ON and relocated to a new site in 1958. Note that these EWC posts could well have been relatively old trees due to the slow growth rate of this species. Sedziak stated that they had not generated data on western species but quoted a service life of 22 to 23 years for round WRC fence posts from a field test by the State of Oregon's Forest Products Research Centre in a climate more conducive to decay than Petawawa. Note these WRC posts would likely have been forest thinnings and therefore contained only juvenile heartwood.

Krzyzewski (1976) quoted an average service life of 27 years for EWC in general and a service life of 16 years for WRC only in a dry Prairie climate. The first number undoubtedly came from the original field tests in Petawawa. The source of the latter number is unknown but may have come from a USDA Forest Products Laboratory test in Montana, which yielded service lives from 16 to 20 years (USDA 1975). Again these WRC fence posts would have been juvenile thinnings and the data from them are not relevant to full size logs or lumber.



Forintek's fence post tests in Petawawa, Ontario.

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