

*Picea abies* (L.) H. Karst., 1881

Table 1: Physical and mechanical properties

Source	Origin	Bulk density (kg/m <sup>3</sup> )		MOE (N/mm <sup>2</sup> )	Strength II (N/mm <sup>2</sup> )			Impact bending (J/cm <sup>2</sup> )	Brinell hardness (N/mm <sup>2</sup> )	Swelling/shrinkage (%)			
		u=12%	Oven-dry		Bending	Tensile	Compression			Longitudinal	Radial	Tangential	Volume
HOLZatlas 1996	unknown	470 (330...680)	430 (300...640)	11000 (7300...21400)	78 (49...136)								
Stenhammer Aanerød 2014	S-E Norway	450 (±42)		12800 (±2500)	47.3 (±11.7)								
Høibø et al. 2013	S-E Norway (Østfold)	493 (±67)		15200 (±3600)	55.9 (±14.4)								
Vestøl et al. 2012	E Norway (Hurdal)	442 (±38)		13000 (±2300)	51.4 (±11)								

a) shrinkage

Stenhammer Aanerød, R. (2014) Modeling density and mechanical properties in Norway spruce (*Picea abies* (L.) Karst) by forest inventory data. Master thesis, Norwegian University of Life Sciences

Høibø, O., Vestøl G. I., Fischer C., Fjeld L., Øvrum A. (2014) Bending properties and strength grading of Norway spruce: variation within and between stands. *Canadian Journal of Forest Research*. 44(2): 128-135.

Vestøl, G. I., Høibø, O., Langsethagen, K. G., Skaug, E., Skyrud, R. E. A. (2012). Variability of density and bending properties of *Picea abies* structural timber. *Wood Material Science & Engineering*, 7(2), 76–86.