

# FLAME-SPREAD RATINGS AND SMOKE-DEVELOPED INDICES: CONFORMANCE WITH MODEL BUILDING CODES

Table 23

Western Softwoods	Flame-Spread Rating	Flame-Spread Class	Smoke-Developed Index	Source
Western Larch	45	B	20	HPVA
Engelmann Spruce	55	B	35	HPVA
Hem-Fir	60	B	70	HPVA
White Fir	65	B	55	HPVA
Pacific Silver Fir	69	B	58	CWC
Western Red Cedar	69	B	137	W*
West Coast Hemlock	73	B	80	W
Sitka Spruce	74	B	74	CWC
Idaho White Pine	82	C	83	W
Douglas Fir	90	C	70	W
Sugar Pine	95	C	80	HPVA
Lodgepole Pine	98	C	90	W
Ponderosa Pine	115	C	135	HPVA

**W\*** Weyerhaeuser Fire Technology Unit, 1987, sponsored by Council of Forest Industries.

**W** Weyerhaeuser Fire Technology Unit, 1988.

**HPVA** Hardwood Plywood & Veneer Association, 1995, 2000, 2001.

**CWC** "Wood and Fire Safety" by the Canadian Wood Council, 1991.

## Model Code Requirements

The most widely accepted flame-spread classification system appears in the National Fire Protection Association Life Safety Code, NFPA 101, and the model building codes as follows:

		Example Building Locations:
0–25	flame-spread—Class A (or I)	Enclosed vertical exits
26–75	flame-spread—Class B (or II)	Exit access corridors
76–200	flame-spread—Class C (or III)	Other rooms and areas

The model building codes require a Smoke-Developed Index of 450 or less for most construction applications.

Designers should consult their model building codes for flame-spread and smoke-developed requirements for specific use, areas and occupancies. When a species does not carry a flame-spread rating appropriate to a desired application, designers may be able to use an intumescent finish or fire-retardant treatment to improve the flame-spread classification and satisfy local building codes.