FLAME SPREAD RATING OF WOOD PRODUCTS USED AS WALL OR CEILING FINISH

Table 1					
Reported Flame Spread Indices					
Material[1]	**ASTM E-84 Flame Spread[2]**	**Source[3]**	**Material[1]**	**ASTM E-84 Flame Spread[2]**	**Source[3]**
LUMBER			**SOFTWOOD PLYWOOD (Exterior Glue[5])**		
Birch, Yellow	105-110	UL	Cedar 3/8"	70-95	APA
Cedar, Pacific Coast Yellow	78	CWC	Douglas Fir 1/4"	150	APA
Cedar, Western Red	70	HPVA	Douglas Fir 5/16"	115-155	APA
Cedar, Western Red	73	CWC	Douglas Fir 3/8"	110-150	APA
Cherry 3/4"	76	HPVA	Douglas Fir 1/2"	130-150	APA
Cottonwood	115	UL	Douglas Fir 5/8"	95-130	APA
Cypress	145-150	UL	Hemlock 3/8"	75-160	APA
Elm 3/4"	76	HPVA	Southern Pine 1/4"	95-110	APA
Fir, Douglas	70-100	UL	Southern Pine 3/8"	100-105	APA
Fir, Douglas 3/4" flooring	83-98	WEY	Southern Pine 5/8"	90	APA
Fir, Amabilis (Pacific Silver)	69	CWC	Redwood 3/8"	95	UL
Gum, Red	140-155	UL	Redwood 5/8"	75	UL
Hemlock, West Coast	60-75	UL	**HARDWOOD PLYWOOD[6]**		
Hemlock, West Coast	73	WEY	Ash 3/4" - Particleboard Core	134	HPVA
Maple (flooring)	104	CWC	Birch 1/4" - Douglas Fir Veneer Core	135-173	HPVA
Oak, Red or White	100	UL	Birch 1/4" - Fuma Veneer Core	127	HPVA
Oak, Red 3/4"	84	HPVA	Birch 3/4" - Douglas Fir Veneer Core	114	HPVA
Oak, White 3/4"	77	HPVA	Birch 3/4" - High Density Veneer Core	114	HPVA
Pecan 3/4"	84	HPVA	Birch 3/4" - Particleboard Core	124	HPVA
Pine, Eastern White	85	CWC	Birch 3/4" - MDF Core	134	HPVA
Pine, Idaho White	72	HPVA	Honduras Mahogany 3/4" - Particleboard Core	105	HPVA
Pine, Idaho White	82	WEY	Lauan 11/64"	167	NIST
Pine, Lodgepole	98	WEY	Lauan 1/4"	150	HPVA
Pine, Northern White	120-215	UL	Oak 1/4" - Douglas Fir Veneer Core	153	HPVA
Pine, Ponderosa[4]	105-230	UL	Oak 3/4" - MDF Core	123	HPVA
Pine, Ponderosa	115	HPVA2	**PARTICLEBOARD**		
Pine, Red	142	CWC	3/16" (Aromatic Cedar Flakeboard)	156	HPVA
Pine, Southern Yellow	130-195	UL	3/8"	200	UL
Pine, Western White	75	UL	1/2"	135	HPVA
Poplar	170-185	UL	1/2"	156	NIST
Redwood	70	UL	5/8"	153	NIST
Redwood 3/8"	102	UL	11/16"	168	UL

Spruce, Engelmann	55	HPVA2	3/4"	145	UL
Spruce, Northern	65	UL	3/4"(Exterior Glue[5])	88-98	APA2
Spruce, Sitka	74	CWC	**MEDIUM DENSITY FIBERBOARD - MDF**		
Spruce, Western	100	UL	3/8"	140	UL
Walnut	130-140	UL	7/16"	125	HPVA
Walnut 3/4"	101	HPVA	5/8"	120	HPVA
ORIENTED STRAND BOARD, WAFERBOARD (Exterior Glue[5])			11/16"	140	UL
5/16"	127-138	APA2	3/4"	140	HPVA
7/16"	86-150	APA2	3/4"	140	HPVA
1/2"	74-172	APA2	3/4"	130	HPVA
3/4"	147-158	APA2	1"	90	UL
			SHAKES and SHINGLES		
			Western Red Cedar Shakes 1/2"	69	HPVA
			Western Red Cedar Shingles 1/2"	49	HPVA

TABLE 1 FOOTNOTES

[1] Thickness of material tested is one-inch nominal except where indicated.

[2] The ASTM E-84 test method has been revised a number of times during the years referenced by the source reports. However, the E-84 test apparatus has changed little over this period. Slightly different flame spread indices, usually lower, result when recent E-84 flame spread calculation techniques are applied to older wood product data. These changes in flame spread indices are not sufficient to change the flame spread class for the wood products described in this report.

[3] Sources:
APA -APA-The Engineered Wood Association, Research Reports 128, Revised, August 1979.
APA2 - APA-The Engineered Wood Association Test Results
CWC -*Wood and Fire Safety*, Canadian Wood Council, 1991.
HPVA -Hardwood Plywood and Veneer Association, Test Reports, 202, 203, 335, 336, 337, 592, and 596; Special flame spread performance tests, Aug. 1974; T9234, T9237, T9317, T9344, T9354, May 1995; T9422, T9430, T9431, T9453, T9665, Feb/July 1997.
HPVA2 - Hardwood Plywood and Veneer Association, March/April 1995.
NIST-National Institute of Standards and Technology (formerly National Bureau of Standards), Technical Notes 879 and 945.
UL -Underwriter's Laboratory, UL 527, May 1971; Subject 723, Assignment 71SC509, Mar 15 &16,1971; Assignment 84NK1898, File R10917, Mar 9, 1984.
WEY -Weyerhaueser Fire Laboratory, 1973, 1987, January & February 1988.

[4] Average of 18 tests was 154 with three values over 200.

[5] Exposure 1 or exterior.

[6] Flame spread of plywood is affected by the species of the face veneer but can also be influenced by the species of the underlying core veneer. Various panel constructions involving certain core species show a relatively high degree of variability and potential to yield flame spread values above 200. Panel constructions involving cores of aspen, sumauma, yellow poplar and white fir have exhibited this behavior with average flame spread indices ranging from 78 to 259. Other factors, in addition to species, including material and process variables related to specific manufacturers can also affect flame spread. Thus, for plywood panels with certain core species, test data from the actual manufacturer is particularly important in establishing the flame spread classification of the product.