

Weather Station Summary

Ammo Dump California

Monthly Summary for:

August, 2004

Day of Month	Day of Year	Wind			Air Temperature			Fuel Temperature			Humidity			Dew Point Deg. Fahrenheit	Wet Bulb	Total Precip. inches
		Ave. mph	V. Dir. Deg	Max. mph	Mean Deg. Fahrenheit	Max Fahrenheit	Min	Mean Deg. Fahrenheit	Max Fahrenheit	Min	Mean Percent	Max Percent	Min			
1	214	9.3	240	24	67	80	60	72	97	58	83	100	54	61	63	0
2	215			41		81	59		98	59		100	50			
3	216	10.3	249	23	67	80	60	72	97	59	81	100	53	61	63	0
4	217	9.7	245	23	68	80	61	73	94	62	84	100	59	62	64	0
5	218	9.2	227	37	68	79	57	72	94	56	80	100	49	61	63	0
6	219	8.7	206	17	71	88	56	75	103	54	72	100	31	59	63	0
7	220	10.0	207	22	73	86	62	76	102	59	69	98	38	61	64	0
8	221	9.7	226	27	71	83	61	75	99	59	78	100	50	63	65	0
9	222	9.7	224	28	72	87	61	77	103	60	78	100	49	64	67	0
10	223	9.2	241	26	75	88	64	79	104	63	73	100	47	65	68	0
11	224	9.0	210	20	72	87	62	76	102	62	83	100	51	65	67	0
12	225	7.6	209	14	70	85	62	75	93	61	84	100	52	64	66	0
13	226	7.8	237	20	69	86	62	73	102	62	88	100	51	65	66	0
14	227	8.2	208	21	69	82	61	74	97	60	86	100	59	64	65	0
15	228	7.2	205	21	68	80	60	72	97	59	85	100	59	63	64	0
16	229	6.7	191	30	67	83	58	71	97	59	86	100	55	61	63	0
17	230	6.4	212	24	67	82	58	72	96	58	86	100	56	62	64	0
18	231	7.4	214	23	66	82	58	71	96	59	87	100	57	62	63	0
19	232	7.4	181	32	66	79	58	69	94	57	86	100	54	61	62	0
20	233	7.0	198	26	67	79	59	70	91	57	88	100	59	62	64	0
21	234	7.0	212	24	67	83	58	70	94	55	84	100	45	61	63	0
22	235	7.6	149	21	67	83	57	71	98	56	80	100	45	59	62	0
23	236	8.2	225	21	67	80	59	70	92	55	78	100	53	59	62	0
24	237	7.7	56	27	67	81	55	70	94	54	78	100	47	58	61	0
25	238	8.4	191	24	68	84	57	72	97	57	80	100	41	60	63	0
26	239	7.2	226	18	67	80	60	71	93	59	85	100	57	62	64	0
27	240	7.8	193	19	69	82	59	73	99	57	79	100	48	61	64	0
28	241	7.4	190	21	69	85	59	73	97	57	82	100	48	62	64	0
29	242	6.9	161	42	69	86	60	73	100	58	79	100	31	60	63	0
30	243	6.8	209	23	70	90	57	74	100	57	77	100	33	61	64	0
31	244	7.8	195	20	73	92	57	75	104	56	74	100	37	62	65	0

MONTHLY STATISTICS - AMMO DUMP (AUGUST 2004)

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	Wind			Air Temperature			Fuel Temperature			Humidity			Dew	Wet	Total
	Ave. mph	V. Dir. Deg	Max. mph	Mean Deg. Fahrenheit	Max Deg. Fahrenheit	Min	Mean Deg. Fahrenheit	Max Deg. Fahrenheit	Min	Mean Percent	Max Percent	Min	Point Deg. Fahrenheit	Bulb Deg. Fahrenheit	Precip. inches
Total															0
Ave.	8.1	211	24.5	68.9	83.3	59.3	72.9	97.5	58.2	81	100	49	62	64	
Max.	10.3		42	75	92	64	79	104	63	88	100	59	65	68	0
Min.	6.4		14	66	79	55	69	91	54	69	98	31	58	61	0

Data are subject to further review and editing. Please refer any questions to the Western Regional Climate Center.

° 1 KW-hr/m² = 86.011 ly. = 86.011 cal/cm² = 3600 KJ/cm² = 316.99 BTU/ft²

Discussion

Daily or monthly average weather data do not show the duration of peak afternoon winds. Only the Maximum mph is indicative of the worst case weather for the particular time period. The Ammo Dump RAWS, is located at Latitude (dd mm ss) 33 ° 22 ' 53 " N Longitude (dd mm ss) 117 ° 17 ' 08 " W at an elevation of 1068 feet, approximately 750 higher in elevation than the Meadowood Project site and several miles distant. Values shown in bold are deemed to be significant wildfire indicators. Data not shown is missing.

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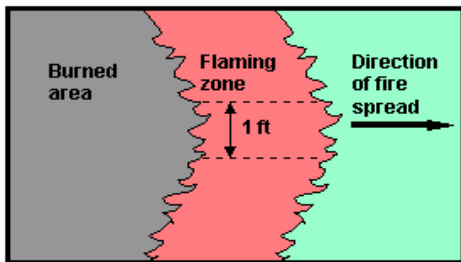
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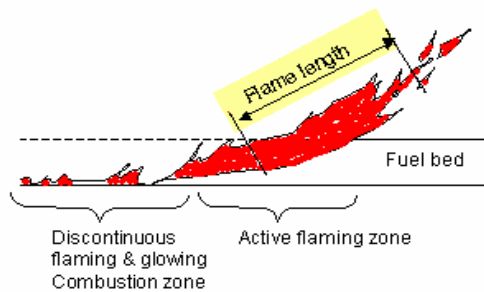
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FIRE BEHAVIOR CALCULATION WORKSHEETS

APPENDIX 'B'



**Fire Intensity / Rate of Spread
(In Flaming Zone) (Dir. of Spread)**



Flame Length



The Behave Logo

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Interpreting Fire Behavior

All fire behavior calculations found on the following worksheets are based on the BEHAVE PLUS 3.0.2 Fire Modeling System - by Patricia L. Andrews, United States Department of Agriculture - Forest Service, Rocky Mountain Research Station – Fire Sciences Lab, Missoula, Montana and Collin D. Bevens, System for Environmental Management, PO Box 8868, Missoula, Montana. This fire modeling system is designed to predict the rate of spread of fire within the flaming front of a fire. Designed for use by skilled fire managers, the system utilizes fuel, weather, and topography data for site specific locations to predict fire behavior. The BEHAVE PLUS 3.0.2 modeling system and an experienced user can predict fire intensity (expressed in Btu's/ft/sec, rate-of-spread (feet/minute) and flame lengths (feet) within a reasonable degree of accuracy for fire planning purposes.

Below is a Table that illustrates the impact of fireline intensity and flame length on fire suppression personnel efforts to contain and control wildfire. The bold lettering indicates that suppression forces are becoming ineffective - See the Interpretation comments. The general public should not attempt to suppress fires on their own when flame lengths are over 4 feet or fire intensity is over 100 Btu's/ft/sec.

Flame Length (ft)	Fireline Intensity (Btu's/ft/sec)	Interpretations
Under 4	Under 100	Fires can generally be attacked at the head or flanks by a person using hand tools. Handline should hold the fire.
4-8	100-500	Handline cannot be relied upon to hold the fire. Equipment such as dozers, pumpers, and retardant aircraft can be effective.
8-11	500-1000	Control efforts at the fire head will probably be ineffective. Crowning, spotting and major fire runs are probable.
Over 11	Over 1000	Control efforts at the head of the fire are ineffective.

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**Fire Analysis Worksheet
BEHAVEPLUS 3.0.2 Fire Modeling**

Northern Boundary Fuels

Project:	Meadowood Project Pardee Homes
Location:	I-15 at Pala Road Fallbrook, CA

		Worst Case	Extreme Summer Day	Typical Summer Day
Inputs:	Fuel Moisture			
	1-Hr.	2	2	4
	10-Hr.	3	3	6
	100-Hr.	5	5	8
	Live Herbaceous Fuel Moisture	30	30	50
	Live Woody Fuel Moisture	50	60	60
	Fuel Model (s) Primary 70 %	18	NA	NA
	Secondary 30 %	6	NA	NA
	<i>Mid-Flame Wind speed</i>	24		
	<i>Terrain Slope (Percent)</i>	50		
	<i>Direction of Wind Vector to Slope</i>	180		
Outputs:	Rate of Spread in Feet/Minute	355	NA	NA
	Fireline Intensity in BTU/FT ² /M	21,994	NA	NA
	Flame Length in Feet	43.8	NA	NA

Comments:

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Fire Analysis Worksheet
BEHAVEPLUS 3.0.2 Fire Modeling

Eastern Boundary Fuels

Project:	Meadowood Project
Location:	Pardee Homes I-15 at Pala Road Fallbrook, CA

		Worst Case	Extreme Summer Day	Typical Summer Day
Inputs:	Fuel Moisture			
	1-Hr.	2	2	4
	10-Hr.	3	3	6
	100-Hr.	5	5	8
	Live Herbaceous Fuel Moisture	30	30	50
	Live Woody Fuel Moisture	50	60	60

Fuel Model (s) Primary	100	%
Secondary	0	%

18	NA	NA
NA	NA	NA

<i>Mid-Flame Wind speed</i>	24		
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<i>Terrain Slope (Percent)</i>	55		
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<i>Direction of Wind Vector to Slope</i>	145		
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Outputs:	Rate of Spread in Feet/Minute	265	NA	NA
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Fireline Intensity in BTU/FT ² /M	19,269	NA	NA
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Flame Length in Feet	42.1	NA	NA
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Comments:

Fire Analysis Worksheet
BEHAVEPLUS 3.0.2 Fire Modeling

Southern Boundary Fuels

Project:	Meadowood Project Pardee Homes
Location:	I-15 at Pala Road Fallbrook, CA

		Worst Case	Extreme Summer Day	Typical Summer Day
Inputs:	Fuel Moisture			
	1-Hr.	2	2	4
	10-Hr.	3	3	6
	100-Hr.	5	5	8
	Live Herbaceous Fuel Moisture	30	30	50
	Live Woody Fuel Moisture	50	60	60
	Fuel Model (s) Primary	NA	18	18
	Secondary	NA	NA	NA
	<i>Mid-Flame Wind speed</i>		15	4
	<i>Terrain Slope (Percent)</i>		30	30
	<i>Direction of Wind Vector to Slope</i>		0	0
Outputs:	Rate of Spread in Feet/Minute	NA	166	58
	Fireline Intensity in BTU/FT ² /M	NA	11,966	3,650
	Flame Length in Feet	NA	33.8	19.6

Comments:

Fire Analysis Worksheet
BEHAVEPLUS 3.0.2 Fire Modeling

Thinning Zone 2 - Southern Boundary Fuels

Project:	Meadowood Project Pardee Homes
Location:	I-15 at Pala Road Fallbrook, CA

		Worst Case	Extreme Summer Day	Typical Summer Day
Inputs:	Fuel Moisture			
	1-Hr.	2	2	4
	10-Hr.	3	3	6
	100-Hr.	5	5	8
	Live Herbaceous Fuel Moisture	30	30	50
	Live Woody Fuel Moisture	50	60	60
	Fuel Model (s) Primary	NA	gr1	NA
	Secondary	NA	NA	NA
	Mid-Flame Wind speed		9	
	Terrain Slope (Percent)		30	
	Direction of Wind Vector to Slope		0	
Outputs:	Rate of Spread in Feet/Minute	NA	41	NA
	Fireline Intensity in BTU/FT²/M	NA	67	NA
	Flame Length in Feet	NA	3.1	NA

Comments:

Expected fire intensity and flame length will be significantly less than the above calculations due to the removal of the target species of native vegetation, replacement with "firewise" plants as needed for erosion from the approved North County Fire Protection District list and maintained yearly.

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Fire Analysis Worksheet
BEHAVEPLUS 3.0.2 Fire Modeling

Western Boundary Fuels West of PA1 Streambed

Project:	Meadowood Project
Location:	Pardee Homes I-15 at Pala Road Fallbrook, CA

	Worst Case	Extreme Summer Day	Typical Summer Day
Inputs: Fuel Moisture			
1-Hr.	2	2	4
10-Hr.	3	3	6
100-Hr.	5	5	8
Live Herbaceous Fuel Moisture	30	30	50
Live Woody Fuel Moisture	50	60	60
Fuel Model (Primary <input style="width: 40px; text-align: center;" type="text" value="70"/> %	NA	t19	NA
Secondary <input style="width: 40px; text-align: center;" type="text" value="30"/> %	NA	18	NA
<i>Mid-Flame Wind speed</i>		9	
<i>Terrain Slope (Percent)</i>		15	
<i>Direction of Wind Vector to Slope</i>		225	
Outputs: Rate of Spread in Feet/Minute	NA	65	NA
Fireline Intensity in BTU/FT ² /M	NA	8,671	NA
Flame Length in Feet	NA	29.2	NA

Comments:

Based on the projected fire behavior, a crown fire could develop especially in areas with high accumulations of dead material throughout the canopy of the trees. Such a fire would produce greater flame lengths and fire intensities. This untreated vegetation type will be located over 50 feet from any structure.

**Fire Analysis Worksheet
BEHAVEPLUS 3.0.2 Fire Modeling**

Western Boundary Fuels - PA 4

Project:	Meadowood Project Pardee Homes
Location:	I-15 at Pala Road Fallbrook, CA

		Worst Case	Extreme Summer Day	Typical Summer Day
Inputs:	Fuel Moisture			
	1-Hr.	2	2	4
	10-Hr.	3	3	6
	100-Hr.	5	5	8
	Live Herbaceous Fuel Moisture	30	30	50
	Live Woody Fuel Moisture	50	60	60
	Fuel Model (s) Primary	NA	2	NA
	Secondary	NA	NA	NA
	Mid-Flame Wind speed	12		
	Terrain Slope (Percent)	15		
	Direction of Wind Vector to Slope	225		
Outputs:	Rate of Spread in Feet/Minute	NA	314	NA
	Fireline Intensity in BTU/FT²/M	NA	3,409	NA
	Flame Length in Feet	NA	19.0	NA

Comments:

Fire Analysis Worksheet
BEHAVEPLUS 3.0.2 Fire Modeling

Western Boundary Fuels West of PA1 Streambed - Treated

Project:	Meadowood Project
	Pardee Homes
Location:	I-15 at Pala Road
	Fallbrook, CA

	Worst Case	Extreme Summer Day	Typical Summer Day
Inputs: Fuel Moisture			
1-Hr.	2	2	4
10-Hr.	3	3	6
100-Hr.	5	5	8
Live Herbaceous Fuel Moisture	30	30	50
Live Woody Fuel Moisture	50	60	60
Fuel Model (s) Primary <input style="width: 40px; text-align: center;" type="text" value="50"/> %	NA	gr1	NA
Secondary <input style="width: 40px; text-align: center;" type="text" value="50"/> %	NA	Sh1	NA
<i>Mid-Flame Wind speed</i>		9	
<i>Terrain Slope (Percent)</i>		15	
<i>Direction of Wind Vector to Slope</i>		225	
Outputs: Rate of Spread in Feet/Minute	NA	36	NA
Fireline Intensity in BTU/FT ² /M	NA	700	NA
Flame Length in Feet	NA	9.2	NA

Comments:

Fire Analysis Worksheet
BEHAVEPLUS 3.0.2 Fire Modeling

Thinning Zone 2 - Eastern Boundary Fuels

Project:	Meadowood Project Pardee Homes
Location:	I-15 at Pala Road Fallbrook, CA

		Worst Case	Extreme Summer Day	Typical Summer Day
Inputs:	Fuel Moisture			
	1-Hr.	2	2	4
	10-Hr.	3	3	6
	100-Hr.	5	5	8
	Live Herbaceous Fuel Moisture	30	30	50
	Live Woody Fuel Moisture	50	60	60
	Fuel Model (s) Primary <input style="width: 40px; text-align: center;" type="text" value="80"/> %	gr1	NA	NA
	Secondary <input style="width: 40px; text-align: center;" type="text" value="20"/> %	sh1	NA	NA
	<i>Mid-Flame Wind speed</i>	24		
	<i>Terrain Slope (Percent)</i>	60		
	<i>Direction of Wind Vector to Slope</i>	180		
Outputs:	Rate of Spread in Feet/Minute	41	NA	NA
	Fireline Intensity in BTU/FT ² /M	67	NA	NA
	Flame Length in Feet	3.1	NA	NA

Comments:
Expected fire intensity and flame length will be significantly less than the above calculations due to the removal of the target species of native vegetation, replacement with "firewise" plants as needed for erosion from the approved North County Fire Protect District list, and maintained yearly.

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APPENDIX 'C'

San Diego County Undesirable Plant List for Fuel Treatment Zones

The following species are highly flammable and should be avoided when planting within the first 50 feet adjacent to a structure. The plants listed below are more susceptible to burning due to rough or peeling bark; production of large amounts of litter; vegetation that contains oils, resin, wax, or pitch; large amounts of dead material in the plant; or plantings with a high dead to live fuel ratio. Many of these species, if existing on the property and adequately maintained (pruning, thinning, irrigation, litter removal, and weeding), may remain as long as the potential for fire spread has been reduced or eliminated.

<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>
<u>Abies species</u>	Fir Trees
<u>Acacia species</u>	Acacia (trees, shrubs, groundcovers)
<u>Adenostoma sparsifolium</u> **	Red Shanks
<u>Adenostoma fasciculatum</u> **	Chamise
<u>Agonis juniperina</u>	Juniper Myrtle
<u>Araucaria species</u>	Monkey Puzzle, Norfolk Island Pine
<u>Artemesia californica</u> **	California Sagebrush
<u>Bambusa species</u>	Bamboo
<u>Cedrus species</u>	Cedar
<u>Chamaecyparis species</u>	False Cypress
<u>Coprosma pumila</u>	Prostrate Coprosma
<u>Cryptomeria japonica</u>	Japanese Cryptomeria
<u>Cupressocyparis leylandii</u>	Leylandii Cypress
<u>Cupressus forbesii</u> **	Tecate Cypress
<u>Cupressus glabra</u>	Arizona Cypress
<u>Cupressus sempervirens</u>	Italian Cypress
<u>Dodonea viscosa</u>	Hopseed Bush
<u>Eriogonum fasciculatum</u> **	Common Buckwheat
<u>Eucalyptus species</u>	Eucalyptus
<u>Heterotheca grandiflora</u> **	Telegraph Plant
<u>Juniperus species</u>	Junipers
<u>Larix species</u>	Larch
<u>Lonicera japonica</u>	Japanese Honeysuckle
<u>Miscanthus species</u>	Eulalia Grass
<u>Muehlenbergia species</u> **	Deer Grass

<u>Palmae species</u>	Palms
<u>Picea species</u>	Spruce Trees
<u>Pickeringia Montana**</u>	Chaparral Pea
<u>Pinus species</u>	Pines
<u>Podocarpus species</u>	Fern Pine
<u>Pseudotsuga menziesii</u>	Douglas Fir
<u>Rosmarinus species</u>	Rosemary
<u>Salvia mellifera**</u>	Black Sage
<u>Taxodium species</u>	Cypress
<u>Taxus species</u>	Yew
<u>Thuja species</u>	Arborvitae
<u>Tsuga species</u>	Hemlock
<u>Urtica urens**</u>	Burning Nettle

** San Diego County native species

References:

Gordon, H. White, T.C. 1994. Ecological Guide to Southern California Chaparral Plant Series. Cleveland National Forest.

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City of Vista, California 1997. Undesirable Plants. Section 18.56.999. Landscaping Design, Development and Maintenance Standards.

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County of Los Angeles Fire Department. 1998. Fuel Modification Plan Guidelines. Appendix I, Undesirable Plant List, and Appendix II, Undesirable Plant List.

APPENDIX 'D'

COUNTY OF SAN DIEGO ACCEPTABLE PLANTS FOR DEFENSIBLE SPACE IN FIRE PRONE AREAS

ALL NATIVE PLANTS ON THE FOLLOWING LIST are considered to be drought-tolerant in the particular climate zone they are found. Those that grow best in riparian areas, as indicated by the "R", are generally the least drought-tolerant plants on the list.

SPECIAL NOTE: When planting, it is necessary to water deeply to encourage plant roots to seek natural moisture in the soil. This watering should continue for at least three years to allow the plants to naturalize. More water should be provided in summer and less (if any) in the winter. These plants should be weaned from the supplemental irrigation and become less dependent on it over the establishment period.

No plant is totally fire resistant. The plants listed were chosen to due to their high water content, minimum amount of flammable resins and/or low fuel volume.

Definitions:

Drought-Tolerant Plant Materials: Trees, shrubs, groundcovers, and other vegetation capable of sustained growth and reproduction with only natural moisture. Occasional supplemental irrigation is necessary only in extreme drought situations.

Establishment Period: The time it takes for a plant to become drought-resistant. This is usually a period of three years and is the time when supplemental irrigation is necessary.

Native or Naturalizing Plant Species: Plant species native to the region or introduced which, once established, are capable of sustaining growth and reproduction under local climatic conditions without supplemental irrigation.

FIREWISE 2000, Inc. Note: The plant list which follows was developed using the plants found on the San Diego County approved plant list. This list was then compared to those plants which are suitable for the climatic zone in which the project is located. Only those plants suitable for the project area are listed below. The list is therefore shorter than that provided by the County. By providing this custom list, plants that are likely to be killed or seriously damaged by frost or will not perform in hot dry conditions have been eliminated. ***FIRE WISE 2000, Inc.*** believes that the planting of species suited to the site is essential to fire management goals and is a environmentally sound practice.

San Diego County Customized Acceptable Plant List For The Meadowood Project

No.	Type	Genus	Species	Common Name
1	Annual	Lupinus spp.	nanus	Lupine
2	Groundcover	Achillea	millefolium	Yarrow
3	Groundcover	Aptenia	cordifolia	Aptenia
4	Groundcover	Arctostaphylos spp.		Manzanita
5	Groundcover	Cerastium	tomentosum	Snow-in-Summer
6	Groundcover	Coprosma	kirkii	Creeping Coprosma
7	Groundcover	Cotoneaster spp.		Redberry
8	Groundcover	Drosanthemum	hispidum	Rosea Ice Plant
9	Groundcover	Dudleya	brittonii	Britton's Chalk Dudleya
10	Groundcover	Dudleya	pulverulenta	Chalk Dudleya
11	Groundcover	Dudleya	virens	Island Live-Forever
12	Groundcover	Eschscholzia	californica	California Poppy
13	Groundcover	Ferocactus	viridescens	Coast Barrel Cactus
14	Groundcover	Gaillardia	grandiflora	Blanket Flower
15	Groundcover	Gazania spp.		Gazania
16	Groundcover	Helianthemum spp.		Sunrose
17	Groundcover	Lantana spp.		Lantana
18	Groundcover	Lasthenia	californica	Common Goldfields
19	Groundcover	Lasthenia	glabrata	Coastal Goldfields
20	Groundcover	Lupinus spp.		Lupine
21	Groundcover	Myoporum spp.		Myoporum
22	Groundcover	Pyracantha spp.		Firethorn
23	Groundcover	Rosmarinus	officinalis	Rosemary
24	Groundcover	Santolina	chamaecyparissus	Lavender Cotton
25	Groundcover	Santolina	virens	Santolina
26	Groundcover	Trifolium	frageriferum	O'Connor's Legume
27	Groundcover	Verbena	rigida	Verbena

<u>No.</u>	<u>Type</u>	<u>Genus</u>	<u>Species</u>	<u>Common Name</u>
28	Groundcover	Viguiera	laciniata	San Diego Sunflower
29	Groundcover	Vinca	major	Periwinkle
30	Groundcover	Vinca	minor	Dwarf Periwinkle
31	Perennial	Coreopsis	gigantea	Giant Coreopsis
32	Perennial	Coreopsis	grandiflora	Coreopsis
33	Perennial	Coreopsis	maritima	Sea Dahlia
34	Perennial	Coreopsis	verticillata	Coreopsis
35	Perennial	Heuchera	maxima	Island Coral Bells
36	Perennial	Iris	douglasiana	Douglas Iris
37	Perennial	Kniphofia	uvaria	Red-Hot Poker
38	Perennial	Lavandula spp.		Lavender
39	Perennial	Limonium	californicum perezii	Coastal Statice
40	Perennial	Limonium	californicum var. mexicanum	Coastal Statice
41	Perennial	Oenothera spp.		Primrose
42	Perennial	Penstemon spp.		Penstemon
43	Perennial	Satureja	douglasii	Yerba Buena
44	Perennial	Sisyrinchium	bellum	Blue-Eyed Grass
45	Perennial	Sisyrinchium	californicum	Golden-Eyed Grass
46	Perennial	Solanum	xantii	Purple Nightshade
47	Perennial	Zauschneria	'Catalina' ?	Catalina Fuschia
48	Perennial	Zauschneria	californica	California Fuschia
49	Perennial	Zauschneria	cana	Hoary California Fuschia
50	Shrub	Agave	americana	Desert Century Plant
51	Shrub	Agave	Amorpha fruticosa	False Indigobush
52	Shrub	Agave	deserti	Shaw's Century Plant
53	Shrub	Agave	shawii	NCN
54	Shrub	Agave		Century Plant
55	Shrub	Arctostaphylos spp.		Manzanita
56	Shrub	Atriplex	canescens	Hoary Saltbush
57	Shrub	Baccharis	pilularis	Coyote Bush
58	Shrub	Baccharis	salicifolia	Mule Fat "R"
59	Shrub	Carissa	macrocarpa	Natal Plum
60	Shrub	Ceanothus spp.		California Lilac
61	Shrub	Cistus spp.		Rockrose
62	Shrub	Cneoridium	dumosum	Bush rue
63	Shrub	Comarostaphylis	diversifolia	Summer Holly
64	Shrub	Convolvulus	cneorum	Bush Morning Glory
65	Shrub	Dalea	attenuata v orcuttii	Orcutt's Delea
66	Shrub	Elaeagnus	pungens	Silverberry
67	Shrub	Encelia	californica	Coast Sunflower
68	Shrub	Encelia	farinosa	White Brittlebush
69	Shrub	Eriobotrya	deflexa	Bronze Loquat
70	Shrub	Eriophyllum	confertiflorum	Golden Yarrow
71	Shrub	Escallonia spp.		Escallonia
72	Shrub	Feijoa	sellowiana	Pineapple Guava
73	Shrub	Fremontodendron	californicum	Flannelbush
74	Shrub	Fremontodendron	mexicanum	Southern Flannelbush
75	Shrub	Galvezia	juncea	Baja Bush-Snapdragon
76	Shrub	Galvezia	speciosa	Island Bush-Snapdragon
77	Shrub	Garrya	elliptica	Coast Silktassel
78	Shrub	Garrya	flavescens	Ashy Silktassel
79	Shrub	Heteromeles	arbutifolia	Toyon
80	Shrub	Lantana spp.		Lantana
81	Shrub	Lotus	scoparius	Deerweed
82	Shrub	Mahonia spp.		Barberry
83	Shrub	Malacothamnus	clementinus	San Clemente Island Bush Mallow
84	Shrub	Malacothamnus	fasciculatus	Mesa Bushmallow
85	Shrub	Melaleuca spp.		Melaleuca
86	Shrub	Mimulus spp.		Monkeyflower
87	Shrub	Nolina	parryi	Parry's Nolina
88	Shrub	Photinia spp.		Photinia
89	Shrub	Pittosporum	crassifolium	NCN
90	Shrub	Pittosporum	rhombofolium	Queensland Pittosporum
91	Shrub	Pittosporum	tobira 'Wheeleri'	Wheeler's Dwarf
92	Shrub	Pittosporum	undulatum	Victorian Box
93	Shrub	Pittosporum	viridiflorum	Cape Pittosporum
94	Shrub	Plumbago	auriculata	Cape Plumbago
95	Shrub	Prunus	caroliniana	Carolina Laurel Cherry
96	Shrub	Prunus	ilicifolia	Hollyleaf Cherry
97	Shrub	Prunus	lyonii	Catalina Cherry
98	Shrub	Puncia	granatum	Pomegranate
99	Shrub	Pyracantha spp.		Firethorn
100	Shrub	Quercus	dumosa	Scrub Oak
101	Shrub	Rhamus	alaternus	Italian Buckthorn
102	Shrub	Rhamus	californica	Coffeeberry
103	Shrub	Rhaphiolepis spp.		Rhaphiolepis
104	Shrub	Rhus	continus	Smoke Tree
105	Shrub	Rhus	integrifolia	Lemonade Berry
106	Shrub	Rhus	laurina	Laurel Sumac
107	Shrub	Rhus	ovata	Sugarbush
108	Shrub	Rhus	trilobata	Squawbush
109	Shrub	Romneya	coulteri	Matilija Poppy
110	Shrub	Rosa	californica	California Wild Rose
111	Shrub	Rosa	minutifolia	Baja California Wild Rose

<u>No.</u>	<u>Type</u>	<u>Genus</u>	<u>Species</u>	<u>Common Name</u>
112	Shrub	Salvia spp.		Sage
113	Shrub	Sambucus spp.		Elderberry
114	Shrub	Symphoricarpos	mollis	Creeping Snowberry
115	Shrub	Syringa	vulgaris	Lilac
116	Shrub	Tecomaria	capensis	Cape Honeysuckle
117	Shrub	Teucrium	fruticans	Bush Germander
118	Shrub	Verbena	lilacina	Lilac Verbena
119	Shrub	Xylosma	congestum	Shiny Xylosma
120	Shrub	Yucca	schidigera	Mojave Yucca
121	Shrub	Yucca	whipplei	Foothill Yucca
121	Tree	Acer	macrophyllum	Big Leaf Maple
122	Tree	Acer	saccharinum	Silver Maple
123	Tree	Alnus	rhombifolia	White Alder "R"
124	Tree	Arbutus	unedo	Strawberry Tree
125	Tree	Archontophoenix	cunninghamiana	King Palm
126	Tree	Brahea	armata	Blue Mexican Palm
127	Tree	Brahea	edulis	Guadalupe Palm
128	Tree	Ceratonia	siliqua	Carob
129	Tree	Cercis	occidentalis	Western Redbud
130	Tree	Cornus	stolonifera	Redtwig Dogwood
131	Tree	Eriobotrya	japonica	Loquat
132	Tree	Erythrina	caffra	Kaffirboom Coral Tree
133	Tree	Gingko	biloba "Fairmount"	Fairmount Maidenhair Tree
134	Tree	Juglans	californica	California Walnut
135	Tree	Lagerstroemia	indica	Crape Myrtle
136	Tree	Ligustrum	lucidum	Glossy Privet
137	Tree	Liquidambar	styraciflua	Sweet Gum
138	Tree	Liriodendron	tulipifera	Tulip Tree
139	Tree	Lyonothamnus	floribundus ssp. Asplenifolius	Fernleaf Catalina Ironwood
140	Tree	Melaleuca spp.		Melaleuca
141	Tree	Myoporum spp.		Myoporum
142	Tree	Nerium	oleander	Oleander
143	Tree	Parkinsonia	aculeata	Mexican Palo Verde
144	Tree	Pistacia	chinensis	Chinese Pistache
145	Tree	Pistacia	vera	Pistachio Nut
146	Tree	Pittosporum	phillyreoides	Willow Pittosporum
147	Tree	Pittosporum	viridiflorum	Cape Pittosporum
148	Tree	Platanus	acerifolia	London Plane Tree
149	Tree	Platanus	racemosa	California Sycamore "R"
150	Tree	Populus	alba	White Poplar
151	Tree	Populus	fremontii	Western Cottonwood "R"
152	Tree	Populus	trichocarpa	Black Cottonwood "R"
153	Tree	Prunus	caroliniana	Carolina Laurel Cherry
154	Tree	Prunus	cersifera 'Newport'	Newport Purple-Leaf Plum
155	Tree	Prunus	ilicifolia	Hollyleaf Cherry
156	Tree	Prunus	lyonii	Catalina Cherry
157	Tree	Prunus	xblireiana	Flowering Plum
158	Tree	Quercus	agrifolia	Coast Live Oak
159	Tree	Quercus	engelmannii	Engelmann Oak
160	Tree	Quercus	suber	Cork Oak
161	Tree	Rhus	lancea	African Sumac
162	Tree	Salix spp.		Willow "R"
163	Tree	Tristania	conferta	Brisbane Box
164	Tree	Ulmus	parvifolia	Chinese Elm
165	Tree	Ulmus	pumila	Siberian Elm
166	Tree	Umbellularia	californica	California Bay Laurel "R"
167	Vine	Antigonon	leptopus	San Miguel Coral Vine
168	Vine	Distictis	buccinatoria	Blood-Red Trumpet Vine
169	Vine	Keckiella	cordifolia	Heart-Leaved Penstemon
170	Vine	Lonicera	japonica 'Halliana'	Hall's Honeysuckle
171	Vine	Lonicera	subspicata	Chaparral Honeysuckle
172	Vine	Solanum	jasminoides	Potato Vine

For plants to be used in fuel treatment Zones A or B that are not found on this list, acquire approval from your local fire department first before installing them. Only "firewise" plants can be used in these zones.

APPENDIX 'E'

As of the date of this FPP, the following are the North County Fire Protection District and San Diego County Building and Fire Code requirements for structures built within a fire hazard zone.

1. All structures will be built with a Class A Roof Assembly, including a Class A roof covering, and attic or foundation ventilation louvers or ventilation openings in vertical walls shall not exceed 144 square inches per opening and shall be covered with 1/4-inch mesh corrosion-resistant metal screening or other approved material that offers equivalent protection. Attic ventilation shall also comply with the requirements of the Uniform Building Code (U.B.C.). Ventilation louvers and openings may be incorporated as part of access assemblies.
2. Where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to prevent the intrusion of flames and embers, be firestopped with approved materials or have one layer of No. 72 ASTM cap sheet installed over the combustible decking.
3. When provided, exposed valley flashings shall be not less than 0.019-inch (No. 26 galvanized sheet gage) corrosion-resistant metal installed over a minimum 36-inch-wide underlayment consisting of one layer of No. 72 ASTM cap sheet running the full length of the valley.
4. Paper-faced insulation shall be prohibited in attics or ventilated spaces.
5. All chimney, flue or stovepipe openings will have an approved spark arrester. An approved spark arrester is defined as a device constructed of nonflammable materials, 12 gauge minimum thicknesses or other material found satisfactory by the North County Fire Protection District, having 1/2-inch perforations for arresting burning carbon or sparks. It shall be installed to be visible for the purposes of inspection and maintenance.
6. All residential structures will have automatic interior fire sprinklers installed according to the National Fire Protection Association (NFPA) 13D- Standard for the Installation of Sprinkler Systems in One and Two-family Homes and Manufactured Homes and the North County Fire Protection District standards.
7. All glass or other transparent, translucent or opaque glazing materials including skylights shall be constructed multi-layered glazed panels one layer of which must be tempered glass. No skylights will be allowed on the roof assembly facing hazardous vegetation.
8. The exterior walls surface materials shall be non-combustible or an approved alternate. In all construction, exterior walls are required to be protected with 2-inch nominal solid blocking between rafters at all roof overhangs.
9. All eaves, fascias and soffits will be enclosed (boxed) with non-combustible materials. This shall apply to the entire perimeter of each structure.
10. All rain gutters, down spouts and gutter hardware shall be constructed from metal or other noncombustible material to prevent wildfire ignition along eave assemblies.
11. Gutters shall be provided with the means to prevent the accumulation of leaf litter and debris that contribute to roof edge ignition.

12. All side yard fence and gate assemblies (fences, gate and gate posts) when attached to the home shall be of non-combustible material. The first five feet of fences and other items attached to a structure shall be of non-combustible material.
13. No attic ventilation openings or ventilation louvers shall be permitted in soffits, in eave overhangs, between rafters at eaves, or in other overhanging areas.
14. All projections (exterior balconies, decks, patio covers, unenclosed roofs and floors, and similar architectural appendages and projections) or structures less than five feet from a building shall be of non-combustible material, one-hour fire resistive construction on the underside, heavy timber construction or pressure-treated exterior fire-retardant wood. When such appendages and projections are attached to exterior fire-resistive walls, they shall be constructed to maintain same fire-resistant standards as the exterior walls of the structure.
15. Exterior doors shall be approved non-combustible construction, solid core wood and shall conform to the performance requirements of standard SFM 12-7A-1 or shall be of approved noncombustible construction, or solid core wood having stiles and rails not less than 1³/₈ inches thick with interior field panel thickness no less than 1¹/₄ inches thick, or shall have a fire-resistance rating of not less than 20 minutes when tested according to ASTM E2074.
16. Vinyl window assemblies are deemed acceptable if the windows have the following characteristics:
 - Frame and sash are comprised of vinyl material with welded corners
 - Metal reinforcements in the interlock area
 - Glazed with insulating glass, annealed or tempered
 - Frame and sash profiles are certified in AAMA Lineal Certification Program
 - Certified and labeled to ANSI/AAMA/NWDA 101/LS2-97 for Structural Requirements
17. All windows shall be provided with 1/8 inch mesh metal or similar non-combustible screens to prevent embers from entering the structure during high wind conditions
18. Roof vents, dormer vents, gable vents, foundation ventilation openings, ventilation openings in vertical walls, or other similar ventilation openings shall be louvered and covered with 1/4-inch, noncombustible, corrosion-resistant metal mesh or other approved material that offers equivalent protection. Turbine attic vents shall be equipped to allow, one-way direction rotation only; they shall not free spin in both directions.
19. Combustible eaves, fascias and soffits shall be enclosed. Eaves of heavy timber construction are not required to be enclosed as long as attic venting is not installed in the eaves. For the purposes of this section heavy timber construction shall consist of a minimum of 4x6 rafter ties and 2x decking.
20. Attic or foundation ventilation louvers or ventilation openings in vertical walls shall not exceed 144 square inches per opening and shall be covered with 1/4-inch mesh corrosion-resistant metal screen or other approved material that offers equivalent protection.

APPENDIX 'F'

Non-combustible & Fire Resistant Building Materials For Balconies, Carports, Decks, Patio Covers and Floors

Examples of non-combustible & fire resistant building materials for balconies, carports decks, patio covers and floors are as follow:

I. **NON-COMBUSTIBLE HEAVY GAGE ALUMINUM MATERIALS** - *Metals* *USA Building Products Group - Ultra-Lattice*



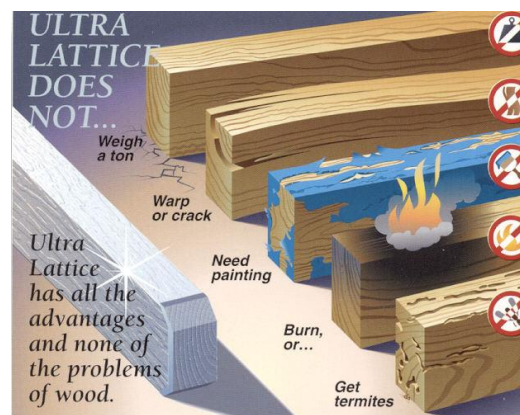
Ultra-Lattice Stand Alone Patio Cover



Ultra-Lattice Attached Patio Cover



Ultra-Lattice Solid Patio Cover



Ultra-Lattice Vs. Wood

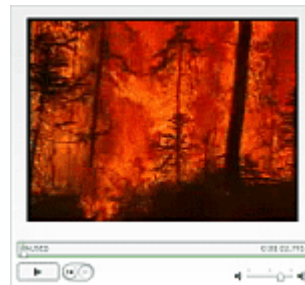
II. FRX Exterior Fire-Retardant Treated Wood

Exterior Fire Retardant Treated (FRT) Wood

FRX® fire retardant treated wood may be used in exterior applications permitted by the codes where: public safety is critical, other materials would transfer heat or allow fires to spread, sprinkler systems cannot easily be installed, corrosive atmospheres necessitate excessive maintenance of other materials, or fire protection is inadequate or not readily available. The International Building, Residential and Urban-Wildland Interface Codes and regulations permit the use of fire retardant treated wood in specific instances. See below for typical exterior uses and typical residential uses.

Typical Exterior Uses

- Balconies
- Decks



Homeowners and Residential Architects: See this [2-minute video](#) and the diagram below.



For information on fire retardant treated wood for exterior uses, visit www.frxwood.com.

Decking (SFM Standard 12-7A-4)

- II. **TREX COMPANY, INC** –“Trex Accents®: Fire Defense™” wood and polyethylene composite deck board, nominal 5/4” thick x 5-1/2” width, nominal density of 0.036 lb/in³.

Trex Accents®: Fire Defense™

The perfect blend of beauty and brawn.

Trex's #1 selling platform, Trex Accents®, exceeds the strict fire regulations set by the State of California and San Diego County.



- Offers superior safety performance:
 - Exceeds ASTM E84 Class B Flame Spread.
 - Exceeds 12-7A-4 Part A (underflame) and Part B (Burning Brand).
- Self-extinguishing even under extreme fire exposure.
- Approved for use by the California State Fire Marshal's Office and San Diego County. Read the California Department of Forestry and Fire Protection, Office of the State Fire Marshal [WILDLAND URBAN INTERFACE \(WUI\) PRODUCTS Report](#). (PDF)

IV. SOLID “WOOD” DECKING

◆Company Name: Various Manufacturers

Product Description: Solid “Wood” decking: “Redwood”, “Western Red Cedar”, “Incense Cedar”, “Port Orford Cedar”, and “Alaska Yellow Cedar”.

Sizes: Minimum nominal 2” thickness (American Softwood Lumber Standard PS 20).

Lumber grades: Construction Common and better grades for Redwood, 3 Common and better grades for Cedars, and commercial decking or better grades for both Redwood and Cedars.

Special instructions: solid wood decking shall be installed over solid wood joists spacing 24” or less on center.

APPENDIX 'G'

SAMPLE

FIRE MANAGEMENT AGREEMENT NOTICE OF ACCESS, VEGETATION CLEARING AND WAIVER OF RESPONSIBILITY AND LIABILITY

This access and vegetation clearing permission and agreement is made and entered into as of (Date), 2005 by and between (Name of Person or Organization) and (Name of Person or Business), who agree as follows:

Providing that the conditions outlined in this agreement are met, (Name) shall allow access to the (Name) and onto the (Site) as shown on "Exhibit A" attached. This access will be necessary to trim natural vegetation and weed-whip the grasses within the area described in "Exhibit A" thus maintaining a proper fuel treatment zone from the residence(s) to be constructed on (Parcel or lot number), City of or County of, California.

Access to the area outlined in "Exhibit A" shall be through _____ and as directed by _____.

It is agreed by all parties that (Name of person or business granting permission) shall waived of any liability and responsibility related to maintaining a proper fuel treatment zone within the area described in "Exhibit A". This waiver shall apply until such time that the property listed in "Exhibit A" is developed and/or the fuel treatment zone is no longer required by the (City of / County of) (Fire Department / Fire Protection District) Fire Marshal.

Signed By: _____
 (Type Name)
 (Address)

Signed By: _____
 (Type Name)
 (Address)

_____ (Date)

_____ (Date)

This sample document should be prepared by an Attorney and Notarized.

APPENDIX 'H'

Reference Publications

1. *BEHAVE: Fire Behavior Prediction and Fuel Modeling System - BURN Subsystem, Part 1.* General Technical Report INT-194. January 1986. Patricia L. Andrews, United States Department of Agriculture - Forest Service, Intermountain Station, Ogden, Utah 84401.
2. *BEHAVE: Fire Behavior Prediction and Fuel Modeling System - BURN Subsystem, Part 2.* General Technical Report INT-260. May 1989. Patricia L. Andrews and Carolyn H. Chase, United States Department of Agriculture - Forest Service, Intermountain Station, Ogden, Utah 84401.
3. *BehavePlus Fire Modeling System, Version 3.0.2* General Technical Report RMRS-GRT-106WWW. June 2003. Patricia L. Andrews, Collin D. Bevins. United States Department of Agriculture - Forest Service, Rocky Mountain Research Station, Missoula, Montana.
4. California Building Code Chapter 7A – Materials and Construction Methods for Exterior Fire Exposure 2007.
5. California Building Code Chapters 86A – Requirements for Wildland-Urban Interface Fire Areas, 2007
6. California Building Code Chapters 86B - Materials and Construction Methods for Exterior Wildfire Exposure, 2007
7. California Code of Regulations [CCR] Title [T] – 24 part 2 Article 86 (8601 & International Urban – Wildland Interface Code, 2003 edition, Ordinance 2004-003.
8. *County of San Diego. Consolidated Fire Code. County Health and Safety Code Section 13869.7.*
9. *County of San Diego. Standards for Private Roads.” Department of Public Works, Adopted June 30, 1999.*
10. *County of San Diego. Fire Prevention Measures to Provide Defensible Space in the Unincorporated Area of the County. Board of Supervisors, Land Use Agenda Item May 15, 2002.*
11. *County of San Diego. Fire, Defensible Space and You, August 1998*
12. *County of San Diego. Guidelines for Determining Significance and Report Format and Content Requirements Wildland Fire and Fire Protection Land Use and Environment Group Department of Planning and Land Use, Department of Public Works, March 19, 2007*
12. *County of San Diego. Plant List and Acceptable Plants for a Defensible Space in Fire Prone Areas. Department of Planning and Land Use, December, 1998.*
13. *County of San Diego. Consolidated Fire Code For the 17 Fire Protection Districts In San Diego County. April 3, 2007.*
14. *Guidance Document Ignition Resistant Eave Construction.* County of San Diego, Department of Planning and Land Use Building Division, DPLU # 198 (3-21-2005).
15. National Fire Protection Association – NFPA 1144 *Standard for Reducing Structure Ignition Hazards from Wildland Fire* (2008).
16. National Fire Protection Association – NFPA 1142 *Standard on Water Supplies for Suburban and Rural Fire Fighting* (2007)

17. Rothermel, Richard C. 1983. How to predict the spread and intensity of forest and range fires. Gen. Tech. Rep. INT-143. Ogden. UT: Intermountain Research Station, Forest Service. U.S. Department of Agriculture; 161 p.
18. Scott, Joe H.; Burgan, Robert E. 2005. **Standard fire behavior fuel models: a comprehensive set for use with Rothermel's surface fire spread model**. Gen. Tech. Rep. RMRS-GTR-153. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 72 p.
19. Western Region Climate Center. RAWS USA Climate Archive. Web: <http://www.raws.dri.edu/index.html>. 2215 Raggio Parkway, Reno, Nevada 89512.