

FIREBALL REPORT

Unique Audit Number: 12,800,234



Study Folder: Terminal Adonai - Efeitos fisicos

Phast 6.7



Terminal Adonai - Efeitos fisicos



Simulações

H176

Base Case

Data



Weather:

Global Weathers\Dia

Speed:

3.00

m/s

Stability: C

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Flame Data

User-Defined Quantities

Calculation Method	DNV Recommended
Material	PROPANE
Ambient Temperature	25.00 degC
Ambient Relative Humidity	0.80 fraction
Mass Modification Factor	3.00
Potential Fireball Mass	2000.00 kg
Vapor Fraction	0.34 fraction
Actual Flammable Mass	2000.00 kg
Vessel Burst Pressure (gauge)	15.00 bar

Input and/or Output Quantities

	Input	Output
Fireball Radius		38.32 m
Fireball Duration		6.15 s
Flame Emissive Power		255.39 kW/m ²
Fireball Lift Off Height		76.63 m

Flame Co-ordinates

X	Z	R	Phi
m	m	m	deg
0.00	38.32	0.00	0.00
0.00	40.63	13.10	0.00
0.00	47.28	24.63	0.00
0.00	57.47	33.18	0.00
0.00	69.98	37.73	0.00
0.00	83.29	37.73	0.00
0.00	95.79	33.18	0.00
0.00	105.98	24.63	0.00
0.00	112.64	13.10	0.00
0.00	114.95	0.00	0.00



Ellipse Results

User-Defined Quantities

Observer Inclination	Variable	deg
Observer Orientation	Variable	deg
Exposure Duration	6.15	s
Effect Height	0.00	m

Radiation Intensity Ellipse

Calculated Quantities

Incident Radiation Level:	9.83	kW/m2
Lethality Level	0.00	%
View Factor	0.04	
Probit Level	-0.35	
Dose Level	1,294,133.28	(W/m2)^Probit N.s
Downwind semi-axis (A)	135.69	m
Crosswind semi-axis (B)	135.69	m
Offset Ratio (D)	0.00	
Effect Distance	135.69	m
Area	57,840.89	m2
Incident Radiation Level:	19.46	kW/m2
Lethality Level	0.13	%
View Factor	0.08	
Probit Level	1.98	
Dose Level	3,216,781.35	(W/m2)^Probit N.s
Downwind semi-axis (A)	84.05	m
Crosswind semi-axis (B)	84.05	m
Offset Ratio (D)	0.00	
Effect Distance	84.05	m
Area	22,191.95	m2
Incident Radiation Level:	35.00	kW/m2
Lethality Level	15.44	%
View Factor	0.14	
Probit Level	3.98	
Dose Level	7,035,797.37	(W/m2)^Probit N.s
Downwind semi-axis (A)	41.46	m
Crosswind semi-axis (B)	41.47	m
Offset Ratio (D)	0.00	
Effect Distance	41.47	m
Area	5,401.48	m2

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Radiation Lethality Ellipse

Lethality Level:	1.00	%
Intensity Level	23.85	kW/m2
View Factor	0.09	
Probit Level	2.67	
Dose Level	4,219,984.47	(W/m2)^Probit N.s
Downwind semi-axis (A)	69.66	m
Crosswind semi-axis (B)	69.66	m
Offset Ratio (D)	0.00	
Effect Distance	69.66	m
Area	15,244.98	m2
Lethality Level:	50.00	%
Intensity Level	47.16	kW/m2
View Factor	0.18	
Probit Level	5.00	
Dose Level	10,470,272.18	(W/m2)^Probit N.s
Downwind semi-axis (A)	Not Reached	m
Crosswind semi-axis (B)	Not Reached	m
Offset Ratio (D)	Not Reached	
Effect Distance	n/a	m
Area	n/a	m2
Lethality Level:	100.00	%
Intensity Level	247.36	kW/m2
View Factor	0.97	
Probit Level	10.66	
Dose Level	95,416,459.59	(W/m2)^Probit N.s
Downwind semi-axis (A)	Not Reached	m
Crosswind semi-axis (B)	Not Reached	m
Offset Ratio (D)	Not Reached	
Effect Distance	n/a	m
Area	n/a	m2

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Radiation Distance

User-Defined Quantities

Maximum Distance	135.69	m
Angle from Wind Direction	0.00	deg
Height above Origin	0.00	m
Observer Inclination	Variable	deg
Observer Orientation	Variable	deg

Calculated Quantities

X Coordinates m	Y Coordinates m	Z Coordinates m	Incident Radiation kW/m2	Lethality Level %	View Factor
0.00			46.03		
2.77			45.96		
5.54			45.76		
8.31			45.44		
11.08			44.99		
13.85			44.43		
16.61			43.76		
19.38			43.00		
22.15			42.15		
24.92			41.22		
27.69			40.23		
30.46			39.19		
33.23			38.41		
36.00			37.28		
38.77			36.13		
41.54			34.97		
44.31			33.81		
47.08			32.65		
49.84			31.50		
52.61			30.37		
55.38			29.08		
58.15			28.01		
60.92			26.96		
63.69			25.94		
66.46			24.95		
69.23			24.00		
72.00			23.08		
74.77			22.19		
77.54			21.34		
80.31			20.52		
83.07			19.73		
85.84			18.97		
88.61			18.25		
91.38			17.56		
94.15			16.89		
96.92			16.26		
99.69			15.65		
102.46			15.07		

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X Coordinates m	Y Coordinates m	Z Coordinates m	Incident Radiation kW/m2	Lethality Level %	View Factor
105.23			14.52		
108.00			13.99		
110.77			13.48		
113.53			13.00		
116.30			12.54		
119.07			12.10		
121.84			11.68		
124.61			11.27		
127.38			10.89		
130.15			10.52		
132.92			10.17		
135.69			9.83		



Weather:

Global Weathers\Noite

Speed:

2.00

m/s

Stability: E

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Flame Data

User-Defined Quantities

Calculation Method	DNV Recommended
Material	PROPANE
Ambient Temperature	20.00 degC
Ambient Relative Humidity	0.80 fraction
Mass Modification Factor	3.00
Potential Fireball Mass	2000.00 kg
Vapor Fraction	0.34 fraction
Actual Flammable Mass	2000.00 kg
Vessel Burst Pressure (gauge)	15.00 bar

Input and/or Output Quantities

	Input	Output
Fireball Radius		38.32 m
Fireball Duration		6.15 s
Flame Emissive Power		255.39 kW/m2
Fireball Lift Off Height		76.63 m

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Flame Co-ordinates

X	Z	R	Phi
m	m	m	deg
0.00	38.32	0.00	0.00
0.00	40.63	13.10	0.00
0.00	47.28	24.63	0.00
0.00	57.47	33.18	0.00
0.00	69.98	37.73	0.00
0.00	83.29	37.73	0.00
0.00	95.79	33.18	0.00
0.00	105.98	24.63	0.00
0.00	112.64	13.10	0.00
0.00	114.95	0.00	0.00



Ellipse Results

User-Defined Quantities

Observer Inclination	Variable	deg
Observer Orientation	Variable	deg
Exposure Duration	6.15	s
Effect Height	0.00	m

Radiation Intensity Ellipse

Calculated Quantities

Incident Radiation Level:	9.83	kW/m2
Lethality Level	0.00	%
View Factor	0.04	
Probit Level	-0.35	
Dose Level	1,294,133.28	(W/m2)^Probit N.s
Downwind semi-axis (A)	138.37	m
Crosswind semi-axis (B)	138.37	m
Offset Ratio (D)	0.00	
Effect Distance	138.37	m
Area	60,146.74	m2
Incident Radiation Level:	19.46	kW/m2
Lethality Level	0.13	%
View Factor	0.08	
Probit Level	1.98	
Dose Level	3,216,781.35	(W/m2)^Probit N.s
Downwind semi-axis (A)	86.11	m
Crosswind semi-axis (B)	86.11	m
Offset Ratio (D)	0.00	
Effect Distance	86.11	m
Area	23,296.15	m2
Incident Radiation Level:	35.00	kW/m2
Lethality Level	15.44	%
View Factor	0.14	
Probit Level	3.98	
Dose Level	7,035,797.37	(W/m2)^Probit N.s
Downwind semi-axis (A)	43.63	m
Crosswind semi-axis (B)	43.63	m
Offset Ratio (D)	0.00	
Effect Distance	43.63	m
Area	5,980.81	m2

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Radiation Lethality Ellipse

Lethality Level:	1.00	%
Intensity Level	23.85	kW/m2
View Factor	0.09	
Probit Level	2.67	
Dose Level	4,219,984.47	(W/m2)^Probit N.s
Downwind semi-axis (A)	71.65	m
Crosswind semi-axis (B)	71.65	m
Offset Ratio (D)	0.00	
Effect Distance	71.65	m
Area	16,129.21	m2
Lethality Level:	50.00	%
Intensity Level	47.16	kW/m2
View Factor	0.18	
Probit Level	5.00	
Dose Level	10,470,272.18	(W/m2)^Probit N.s
Downwind semi-axis (A)	1.75	m
Crosswind semi-axis (B)	1.75	m
Offset Ratio (D)	0.00	
Effect Distance	1.75	m
Area	9.58	m2
Lethality Level:	100.00	%
Intensity Level	247.36	kW/m2
View Factor	0.97	
Probit Level	10.66	
Dose Level	95,416,459.59	(W/m2)^Probit N.s
Downwind semi-axis (A)	Not Reached	m
Crosswind semi-axis (B)	Not Reached	m
Offset Ratio (D)	Not Reached	
Effect Distance	n/a	m
Area	n/a	m2



Radiation Distance

User-Defined Quantities

Maximum Distance	138.37	m
Angle from Wind Direction	0.00	deg
Height above Origin	0.00	m
Observer Inclination	Variable	deg
Observer Orientation	Variable	deg

Calculated Quantities

X Coordinates m	Y Coordinates m	Z Coordinates m	Incident Radiation kW/m2	Lethality Level %	View Factor
0.00			47.18		
2.82			47.11		
5.65			46.91		
8.47			46.56		
11.30			46.09		
14.12			45.50		
16.94			44.79		
19.77			43.98		
22.59			43.09		
25.41			42.11		
28.24			41.07		
31.06			39.98		
33.89			39.14		
36.71			37.96		
39.53			36.76		
42.36			35.55		
45.18			34.34		
48.00			33.13		
50.83			31.94		
53.65			30.58		
56.48			29.44		
59.30			28.33		
62.12			27.25		
64.95			26.21		
67.77			25.19		
70.59			24.21		
73.42			23.27		
76.24			22.36		
79.07			21.49		
81.89			20.65		
84.71			19.85		
87.54			19.08		
90.36			18.34		
93.19			17.64		
96.01			16.96		
98.83			16.32		
101.66			15.70		
104.48			15.12		

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X Coordinates m	Y Coordinates m	Z Coordinates m	Incident Radiation kW/m2	Lethality Level %	View Factor
107.30			14.56		
110.13			14.02		
112.95			13.51		
115.78			13.02		
118.60			12.56		
121.42			12.11		
124.25			11.69		
127.07			11.28		
129.89			10.89		
132.72			10.52		
135.54			10.17		
138.37			9.83		