

## SIMULAZIONI RILASCIO LIQUIDO INFIAMMABILE DA COLLI SU RIMORCHIO

L'ipotesi riguarda il danneggiamento di un collo contenente liquido infiammabile caricato a bordo di un rimorchio stradale. L'incidente comporta la rottura il rilascio di liquido e il successivo incendio della pozza.

### ***Ipotesi simulazioni***

Sostanza pericolosa: n-pentano  
Stato fisico: liquido  
Classificazione: Estremamente infiammabile

Superficie interessata: 30 m<sup>2</sup> (rimorchio da 40 ft)

Condizioni meteo: 4D  
(maggiormente ricorrenti)

### ***Risultati delle simulazioni***

Scenario incidentale	Raggi di danno [m]					Durata effetti [min]
	37.5 kW/m <sup>2</sup>	12.5 kW/m <sup>2</sup>	7 kW/m <sup>2</sup>	5 kW/m <sup>2</sup>	3 kW/m <sup>2</sup>	
Pool fire	9	13	18	20	23	< 5

**Tabella 6**

N.B.: Il valore calcolato per la durata degli effetti non tiene conto dell'eventuale propagazione dell'incendio ad altra merce combustibile presente sullo stesso rimorchio.

Project : Pool fire 40ft

Session 1

----- START OF SESSION 1(mYBPoolFire) -----

INPUT

Model..... : Pool fire (137)  
Version..... : 5.11  
Reference..... : Yellow Book (CPR-14E), 3rd edition  
                  1997, Paragraph 6.5.4  
Case description..... : Pool fire 40ft PENTANO  
Chemical name..... : Pentane (n-)  
Type of confinement..... : Confined  
Total mass released..... : 1000 kg  
Fixed pool surface..... : 30 m2  
Height of the observer position above ground level..... : 1 m  
Height of the confined pool above ground level..... : 0 m  
Temperature of the pool..... : 16 °C  
Pool burning rate..... : Calculate/Default  
Fraction combustion heat radiated..... : 13 %  
Soot Fraction..... : Calculate/Default  
Wind speed at 10 m height..... : 4 m/s  
Ambient temperature..... : 16 °C  
Ambient relative humidity..... : 66 %  
Amount of CO2 in atmosphere..... : 0.03 %  
Distance from the edge of the pool..... : 30 m  
Exposure duration to heat radiation..... : 20 s  
Take protective effects of clothing into account..... : No  
X-coordinate of release..... : 0 m  
Y-coordinate of release..... : 0 m  
Predefined wind direction..... : User defined  
Wind comes from (West = 180 degrees)..... : 180 deg  
Calculate all contours for..... : Physical effects  
Heat radiation level (lowest) for first contour plot..... : 3 kW/m2  
Heat radiation level for second contour plot..... : 7 kW/m2  
Heat radiation level (highest) for third contour plot..... : 12.5 kW/m2

RESULTS

Heat radiation at X..... : 0.88223 kW/m2  
Heat radiation first contour at..... : 20.327 m  
Heat radiation second contour at..... : 14.766 m  
Heat radiation third contour at..... : 10.317 m  
Combustion rate..... : 3.3808 kg/s  
Duration of the pool fire..... : 295.79 s  
Heat emission from fire surface..... : 28.678 kW/m2  
Flame tilt..... : 53.749 deg  
View factor..... : 4.2064 %  
Atmospheric transmissivity..... : 73.135 %  
Flame temperature..... : 573.05 °C  
Height of the Flame..... : 14.667 m  
Weight ratio of HCL/chemical..... : 0 %  
Weight ratio of NO2/chemical..... : 0 %  
Weight ratio of SO2/chemical..... : 0 %  
Weight ratio of CO2/chemical..... : 305.09 %  
Weight ratio of H2O/chemical..... : 149.89 %

----- END OF SESSION 1 -----

Administrative & version data:

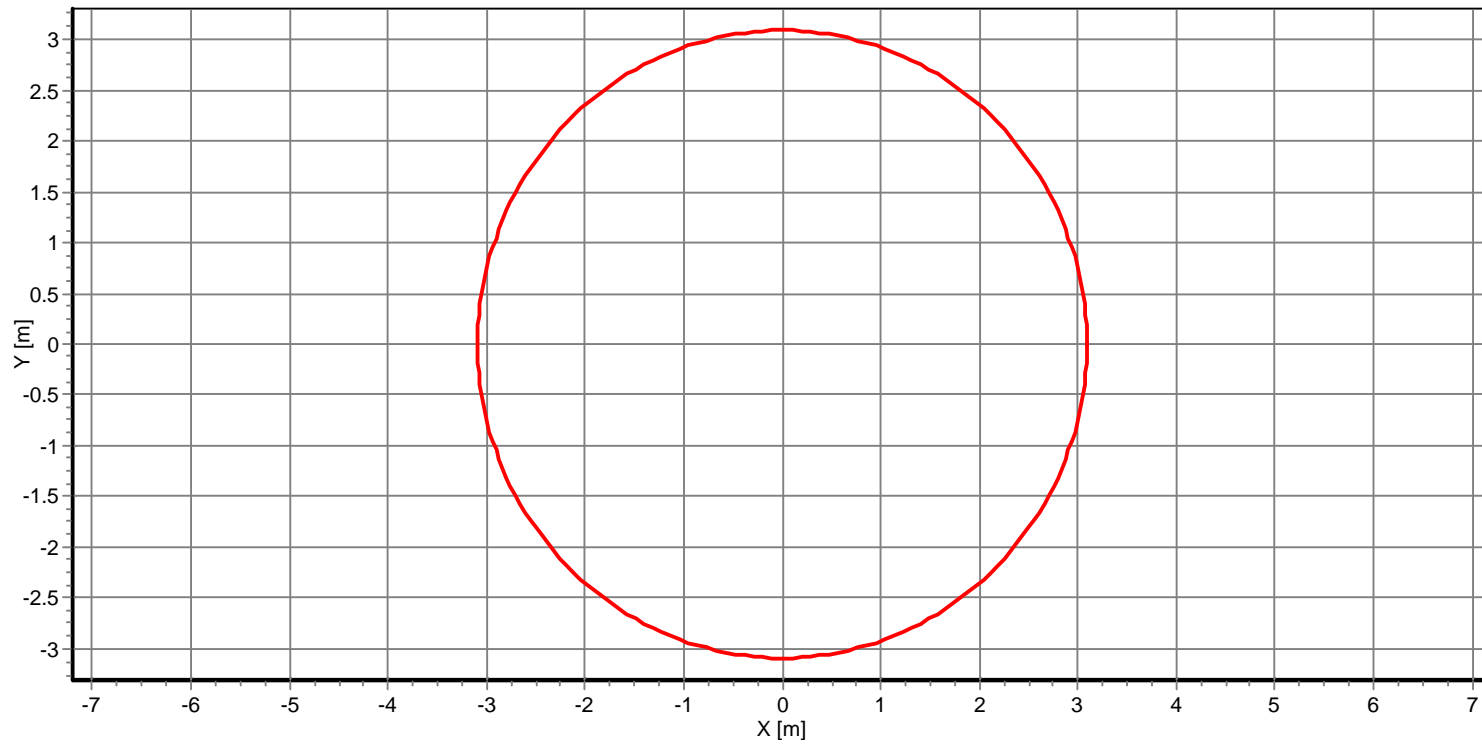
-----  
Main program (production date) : Effects (24 Apr 2009 03:00:37)  
Run mode (complexity level) : Expert  
Model name : Pool fire (137)  
Date of this calculation : 03 Oct 2013 15:59:21  
License owner : rachele  
Calculation performed by : rachele  
Software library version : 7.6.4.3276  
Model driver version(s) : 5.11  
Model driver last modification : 30 Nov 2007  
Model executable version(s) : N/A  
Session nr. : 1  
References : Yellow Book (CPR-14E), 3rd edition 1997, Paragraph 6.5.4  
Project file name : "Pool fire 40ft.alf"  
Chemical database used : "Purple Book (1999).rdb" (30 ago 2013 15:58:00)  
Environment database used : "Purple Book (1999).Env" (20 mag 2008 09:53:47)  
System database used : "Purple Book (1999).SPF" (20 mag 2008 09:53:47)  
Dispersion database used : "Purple Book (1999).dpf" (20 mag 2008 09:53:47)  
Map background file used : "Pool fire 40ft.gbf" (01 gen 0 00:00:00)  
Project file directory : "C:\PC08\_Rachele\RISP\RISP\_2013\Simulazioni trasporti\IMO 3\Pool fire rimorchio"  
Chemical database directory : "C:\Program Files (x86)\TNO\Effects 7.6\Shared data\Databases"  
Environment database directory : "C:\Program Files (x86)\TNO\Effects 7.6\Shared data\Databases"  
System database directory : "C:\Program Files (x86)\TNO\Effects 7.6\Shared data\Databases"  
Dispersion database directory : "C:\Program Files (x86)\TNO\Effects 7.6\Shared data\Databases"  
Map background directory : "C:\PC08\_Rachele\RISP\RISP\_2013\Simulazioni trasporti\IMO 3\Pool fire rimorchio"  
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End of administrative & version data:

Effects 7.6.4.3276 Calculation: 26 Sep 2013 12:05:38  
Model: Pool fire (137)  
Graph: Pool contour (Pool Fire)

rachele

Pool fire 40ft PENTANO



Effects 7.6.4.3276 Calculation: 24 Sep 2013 10:32:03  
Model: Pool fire (137)  
Graph: Heat radiation vs. distance (Pool Fire)

Pool fire 40ft PENTANO

