

Fire Safety Concept Tree scenario worksheet (NFPA 550)



Company	ICL Industrial Products	Behandelt door	SPR
Area	BN1-opslag	Date	14-3-2012
Scenario nr.	1		
Scenario title	Plasbrand nabij IBC's binnen de opslag door operatorfout		

Scenario consequences		Direct causes	
Constructie	Kalkzandsteen constructie 60 min brandwerend		
Apparaat			
Kabels			
Bluswaterleiding			
Besmetting product			
Sumps			
Luchtleidingen			
Koelwater systeem			
Blankets, slijkstofsysteem			

Preventive LOD's		Securing LOD's	
nr.		nr.	
1	Hi-Ex inside air schuimblusinstallatie		
2	Omhuiling 60 min WDBO uitgevoerd		
3	Brandmeldinstallatie met volledige detectie		

Concept checklist	Manage method	To be used	Control item	To be used	How	How (2nd level)	Acceptable/Possible	Remarks
Manage fire	Control combustion process	☐	Control fuel	☐	Control fuel properties, or		☐	
			OR		Limit fuel quantity, or		☐	
	OR	☐	Control the environment	☐	Control fuel distribution		☐	
			OR		Control physical properties of environment, or		☐	
	Surpress fire	☒	Automatically surpress fire	☒	Control chemical composition of environment		☐	
			OR		Detect fire, and		☒	Volledige detectie
	OR	☒	Manually surpress fire	☐	Apply sufficient surpressant		☒	Hi-Ex inside air schuimblusinstallatie
			OR		Detect fire, and		☒	Volledige detectie
	Control fire by construction	☒	Control movement of fire	☒	Communicate signal, and		☒	Akoestisch alarm
			AND		Decide action, and		☐	
Manage exposed	Limit amount exposed	☒	Provide structural stability	☒	Respond to site, and		☐	
			OR		Apply sufficient surpressant, and		☐	
	Safeguard exposed	☐	Defend exposed in place,	☐	Accessable, and		☐	
			OR		Workable		☐	
	Move exposed	☐	Defend the place, and	☐	Vent fire, or		☐	
			OR		Confine/contain fire		☒	Brandcompartimenten < 1.000 m2
	Provide movement need	☐	Defend against fire products, and	☐	Provide structural stability		☒	Compartment 60 minuten brandwerend uitgevoerd
			Provide structural stability		Maintain essential environment		☐	
	Detect need, and	☐	Cause movement of exposed, and	☐	Provide route access		☐	
			Provide movement need		Signal need, and		☐	
Prevent fire ignition	Control heat-energy sources	☐	Eliminate heat-energy sources, or	☐	Provide instructions		☐	
			Control rate of heat-energy release		Provide capacity, and		☐	
	Control source-fuel interactions	☐	Control heat-energy source transport, and	☐	Provide route completeness, and		☐	
			Control heat-energy transfer processes, and		Provide protected path, and		☐	
	Control fuel transport	☐	Control fuel transport	☐	Provide route access		☐	
			Eliminate fuel(s), or		Signal need, and		☐	
	Control fuel ignitibility	☐	Control fuel ignitibility	☐	Provide instructions		☐	
			Control fuel properties, or		Provide capacity, and		☐	
	Control the environment	☐	Control fuel properties, or	☐	Provide route completeness, and		☐	
			Control the environment		Provide protected path, and		☐	

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Company	ICL Industrial Products		Behandelt door	SPEC	
Area	BN1-opslag		Date	14-3-2012	
Scenario nr.	2				
Scenario title	Plasbrand nabij IBC's binnen de opslag door lekkage van IBC				

Scenario consequences		Direct causes	
Constructie	Kalkzandsteen constructie 60 min brandwerend		
Apparatuur			
Kabels			
Bluswaterleiding			
Besmetting product			
Sumps			
Luchtleidingen			
Koelwater systeem			
Blankets, slijkstofsysteem			

Preventive LOD's		Securing LOD's	
nr.		nr.	
1	Hi-Ex inside air schuimblusinstallatie		
2	Omhuiling 60 min WDBO uitgevoerd		
3	Brandmeldinstallatie met volledige detectie		

Concept checklist	Manage method	To be used	Control item	To be used	How	How (2nd level)	Acceptable/Possible	Remarks	
Manage fire	Control combustion process	☒	Control fuel	☒	Control fuel properties, or Limit fuel quantity, or Control fuel distribution		☐		
			OR	Control the environment	☒	Control physical properties of environment, or Control chemical composition of environment		☐	
	Surpress fire	☒	Automatically surpress fire	☒	Detect fire, and Apply sufficient surpressant		☒	Volledige detectie Hi-Ex inside air schuimblusinstallatie	
			OR	Manually surpress fire	☒	Detect fire, and Communicate signal, and		☒	Volledige detectie Akoestisch alarm
					Decide action, and Respond to site, and Apply sufficient surpressant, and		☐		
					Accessible, and Workable		☐		
	Control fire by construction	☒	Control movement of fire AND Provide structural stability	☒	Vent fire, or Confine/contain fire		☐		
							☒	Brandcompartimenten < 1.000 m2 Compartiment 60 minuten brandwerend uitgevoerd	
	Manage exposed	Limit amount exposed	☒					☒	Vluchtafstand ruim binnen gestelde eis
				Safeguard exposed	☒	Defend exposed in place, or Restrict movement of exposed, and Defend the place, and Defend against fire products, and Provide structural stability Maintain essential environment		☐	
Move exposed		☒	Cause movement of exposed, and Provide movement need	☒	Detect need, and Signal need, and Provide instructions Provide capacity, and Provide route completeness, and Provide protected path, and Provide route access		☐		
							☐		
							☐		
							☐		
							☐		
							☐		
Prevent fire ignition		Control heat-energy sources	☒	Eliminate heat-energy sources, or Control rate of heat-energy release			☐		
							☐		
	Control source-fuel interactions	☒	Control heat-energy source transport, and	☒	Provide separation, or Provide barrier Control conduction, and Control convection, and Control radiation		☐		
			Control heat-energy transfer processes, and	☒		☐			
			Control fuel transport	☒	Provide barrier, or Provide separation		☐		
						☐			
	Control fuel	☒	Eliminate fuel(s), or Control fuel ignitibility	☒	Control fuel properties, or Control the environment		☐		
						☐			

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Company	ICL Industrial Products	Behandelt door	SPR
Area	Loods 8-opslag	Date	14-3-2012
Scenario nr.	3		
Scenario title	Plasbrand nabij IBC's binnen de opslag door operatorfout		

Scenario consequences		Direct causes	
Constructie	Kalkzandsteen constructie 60 min brandwerend		
Apparaat			
Kabels			
Bluswaterleiding			
Besmetting product			
Sumps			
Luchtleidingen			
Koelwater systeem			
Blankets, stikstofsysteem			

Preventive LOD's		Securing LOD's	
nr.		nr.	
1	Omhuiling 60 min WDBO uitgevoerd		
2	Brandmeldinstallatie met volledige detectie		

Concept checklist	Manage method	To be used	Control item	To be used	How	How (2nd level)	Acceptable/ Possible	Remarks	
Manage fire	Control combustion process	☒	Control fuel	☒	Control fuel properties, or Limit fuel quantity, or Control fuel distribution		☐		
			OR		Control the environment	Control physical properties of enviroment, or Control chemical composition of enviroment		☐	
	Surpress fire	☒	Automaticaly surpress fire	☒	Detect fire, and		☒	Volledige detectie	
			OR		Apply sufficient surpressant	☐			
			Manually surpress fire		☒	Detect fire, and		☒	Volledige detectie
						Communicate signal, and		☒	Akoestisch alarm
	Decide action, and			☐					
	Respond to site, and			☐					
	OR	☒	Apply sufficient surpressant, and		☐				
			Accessible, and		☐				
			Workable		☐				
			Control fire by construction		☒				
		☒	Control movement of fire	☒	Vent fire, or		☐		
			AND		Confine/contain fire		☐	Brandcompartimenten > 1.000 m2	
		Provide structural stability			☒	Compartment 60 minuten brandwerend uitgeoerd			
Manage exposed	Limit amount exposed						☒	Vluchtafstand ruim binnen gestelde eis	
	Safeguard exposed	☒	Defend exposed in place,	☒	Restrict movement of exposed, and		☐		
					OR	Defend the place, and	Defend against fire products, and	☐	
			Provide structural stability			☐			
			Maintain essential enviroment		☐				
	Move exposed	☒	Cause movement of exposed, and	☒	Detect need, and		☐		
					Signal need, and		☐		
			Provide instructions		☐				
			Provide movement need	☒	Provide capacity, and		☐		
	Provide route completeness, and				☐				
			Provide protected path, and		☐				
			Provide route access		☐				
	Prevent fire ignition	Control heat-energy sources	☒	Eliminate heat-energy sources, or			☐		
				Control rate of heat-energy release			☐		
Control source-fuel interactions		☒	Control heat energy source transport, and	☒	Provide separation, or		☐		
					Provide barrier		☐		
			Control heat-energy transfer processes, and	☒	Control conduction, and		☐		
					Control convection, and		☐		
Control fuel transport		☒	Control radiation		☐				
			Provide barrier, or		☐				
Control fuel		☒	Eliminate fuel(s), or	☒	Provide separation		☐		
					Control fuel ignitibility	Control fuel properties, or		☐	
			☒	Control the environment		☐			

Scenario consequences		Direct causes	
Constructie	Kalkzandsteen constructie 60 min brandwerend		
Apparatuur			
Kabels			
Bluswaterleiding			
Besmetting product			
Sumps			
Luchtleidingen			
Koelwater systeem			
Blankets, stikstofsysteem			

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Concept checklist	Manage method	To be used	Control Item	To be used	How	How (2nd level)	Acceptable/ Possible	Remarks		
Manage fire	Control combustion process	☐	Control fuel	☐	Control fuel properties, or		☐			
					Limit fuel quantity, or		☐			
					Control fuel distribution		☐			
	OR	☐	Control the environment	☐	Control physical properties of environment, or		☐			
					Control chemical composition of environment		☐			
	Suppress fire	☐	Automatically suppress fire	☐	Detect fire, and		☒	Volledige detectie		
					Apply sufficient suppressant		☐			
	OR	☐	Manually suppress fire	☐	Detect fire, and		☒	Volledige detectie		
					Communicate signal, and		☒	Akoestisch alarm		
		☐		☐	Decide action, and		☐			
					Respond to site, and		☐			
					Apply sufficient suppressant, and		☐			
	OR	☐		☐	Accessible, and		☐			
					Workable		☐			
Control fire by construction	☐	Control movement of fire	☐	Vent fire, or		☐				
				AND						
				Confine/contain fire		☐	Brandcompartimenten > 1.000 m2			
		Provide structural stability				☒	Compartiment 60 minuten brandwerend uitgevoerd			
Manage exposed	Limit amount exposed						☒	Vluchtafstand ruim binnen gestelde eis		
	Safeguard exposed	☐	Defend exposed in place,	☐	Restrict movement of exposed, and		☐			
					Defend the place, and	Defend against fire products, and	☐			
						Provide structural stability	☐			
					Maintain essential environment		☐			
					OR	☐	Move exposed	Cause movement of exposed, and	☐	
								Detect need, and	☐	
								Signal need, and	☐	
								Provide instructions	☐	
							Provide movement need	Provide capacity, and	☐	
								Provide route completeness, and	☐	
								Provide protected path, and	☐	
								Provide route access	☐	
	Prevent fire ignition	Control heat-energy sources	☐	Eliminate heat-energy sources, or				☐		
				Control rate of heat-energy release				☐		
		Control source-fuel interactions	☐	Control heat-energy source transport, and	☐	Provide separation, or		☐		
						Provide barrier		☐		
Control heat-energy transfer processes, and				☐	Control conduction, and		☐			
					Control convection, and		☐			
					Control radiation		☐			
Control fuel		☐	Control fuel transport	☐	Provide barrier, or		☐			
					Provide separation		☐			
			Eliminate fuel(s), or	☐						
Control fuel ignitibility	☐	Control fuel properties, or	☐							
		Control the environment	☐							