

ACE Group

Formaldehyde plant



The plant

The formaldehyde plant is still perfectly in effect with a the total capacity of 75.000 ton, 37% per year. Its' minimum yield of formaldehyde is 92%!

Highlights

75.000 ton, 37% per year

Methanol value < 1%

Formic acid < 400 ppm

Yield minimum of 92%

Emission stackgas: less than 100 grams formaldehyde per hour

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Blower



Absorber truck

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Cooling Tower

Recent investments

To ensure the plants' capacity and to maintain its' workflow, The Company invested in new stainless steel equipment in 2007.

The Company has completely renewed its reactor, vaporizer and the feedline to the reactor. All have been built out of stainless steel which will prevent corrosion and extend the lifetime of the plant.

In 2007, The Company also invested in a complete new operating computer system.

One new stainless steel reactor 2007

One new stainless steel vaporizer 2007

A new stainless steel feedline to reactor 2007

Migration of DCS Emerson RS3 to DCS Emerson DeltaV 2007

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Top vaporizer



Incinerator



Reactor

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DCS IO's

Modular building

The plant is built out of stand alone modules which makes disconnecting and rebuilding of the plant easy. After splitting the plant up into its' modules, the current location by the water makes the logistics of moving the plant fast and easy. For the building of the plant, stainless steel is used, which ensures a life-time protection against corrosion.

Plant exists out modular parts

Quick disconnect/dismantle of plant

Easy shipment of modular parts via water

Easy rebuilding of modular parts at different location

Cost reducing movement thanks to modular parts

Delivery without catalyst

Stainless steel

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Construction



Shipping reactor

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Shipping DT condensers

Equipment

	Proces conditions max.							
	Tube				Shell			
	Medium	Pressure (Barg)	Temp. (°C)	Volume (L)	Medium	Pressure (Barg)	Temp. (°C)	Volume (L)
Vaporizer A	Methanol	1,3	260	4600	Formaldehyde	1,3	320	5600
Vaporizer B	Methanol	1,3	260	4600	Formaldehyde	1,3	320	5600
Reactor A	Forma	1,3	300	30000	Dowtherm	2,25	300	10500
Reactor B	Forma	1,3	300	30000	Dowtherm	2,25	300	10500
Dowtherm condensor	Dowtherm	2,25	300	4300	Water	25	250	1500
Dowtherm condensor	Dowtherm	2,25	300	4300	Water	25	250	1500
Dowtherm heaters	Dowtherm	2,25	300	840				
Storage vessel	Steam	3	145	48	Dowtherm	0	250	23000
Boiler feed water vessel	Water	0	15	3600				
Steam condensor	Steam				Water	6	80	
Absorber	Forma							
Steam water separator		25	225	40				
Heat exchanger								
Steam generator	Steam	25	250	29	Stack gas		250	
Steam generator	Water	25	250	74	Stack gas		250	
Catalytic bed	Forma							
Steam vessel	Steam							

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Overview electrical components

all 400V

Incinerator Heaters 2 x 50 KW

MCC100 (various pumps) 130 KW

Dowtherm Heaters 6 x 50 KW

Blower A 355 KW

Blower B 355 KW

Cooling Tower 230 KW



Blower

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DCS cabinet

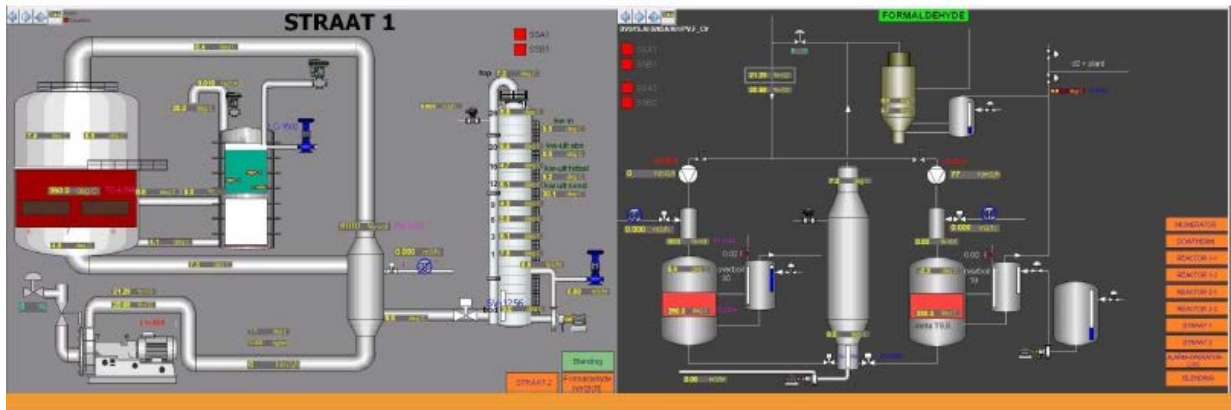


Inlet blowers

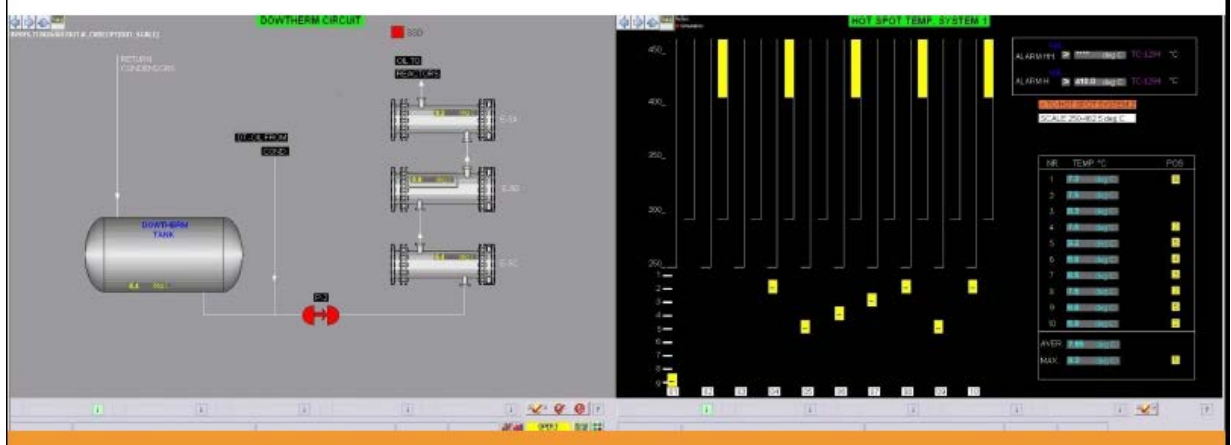
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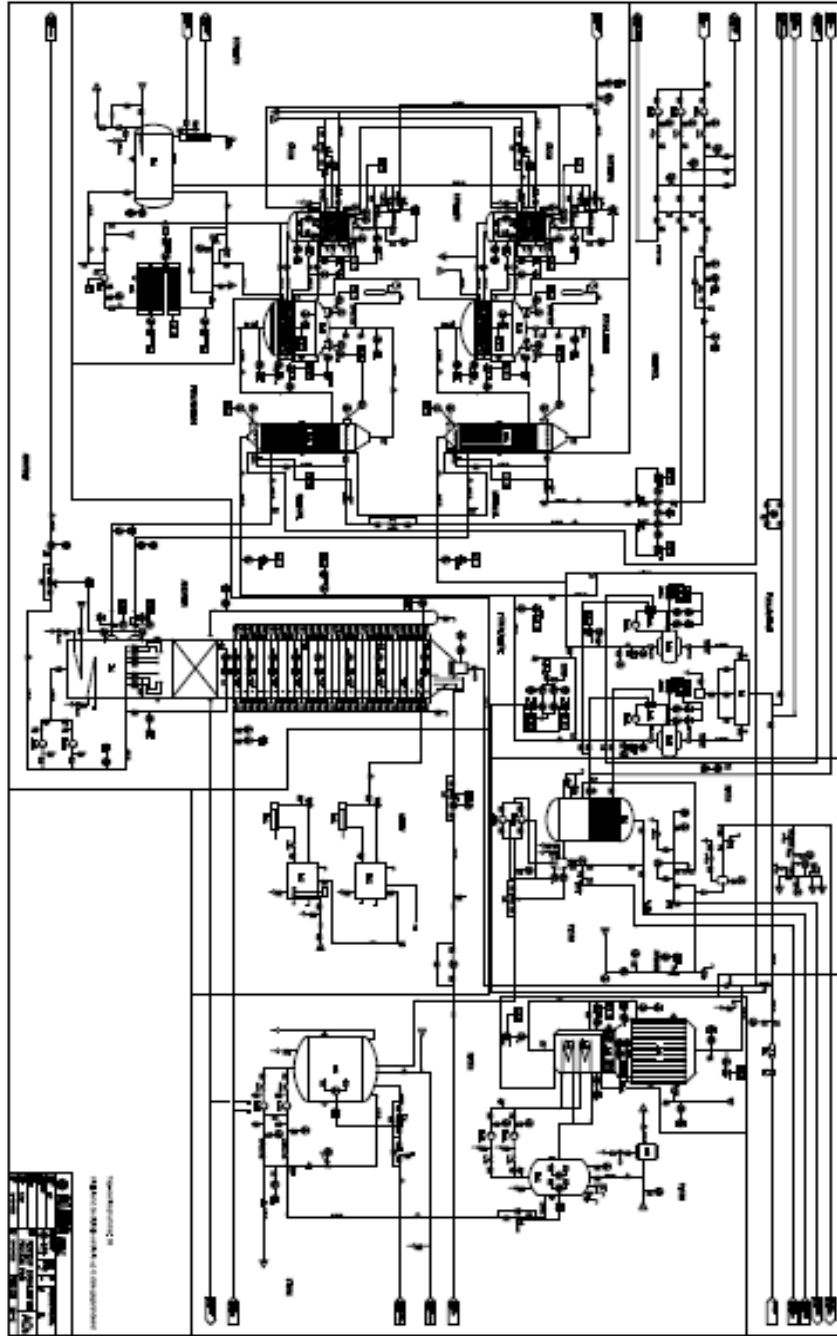
Flow chart



Dowtherm hotspot



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