

Piping list ASU Area

Diagram No.: 792.86811
Revision: As B.
Date: 30.11.2006
Diagram state: As B.

Project: KOSICE, ASU Area
Project No.: K70101
List state: As B.

COVER - SHEET

Distribution	
Name	Department
H. Delattre	ALE
H. Dr. Nipper	IA.Z
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Processing

Date	Name	Checked by	Status
12.01.2005	Chiran	Rüdiger	Rev.0
12.05.2005	Reidenbach	Gans	Rev.1
23.06.2005	Honarassa	Gans	Rev1A
14.07.2005	Dziadek	Gans	Rev1B
04.08.2005	Dziadek	Gans	Rev2
25.08.2005	Reidenbach	Gans	Rev2A
09.09.2005	Honarassa	Gans	Rev2B
13.01.2006	Dziadek/IES	Gans	Rev2C
15.02.2007	Dziadek/IES	Dr. Nipper	As B.

Flexibility Test:
C = Calculation
SM = Simplified methode
PE = Professional experience

Type of Insulation:
C = Low-temperature insulation
CV = Low-temperature insulation
EP = electric polished
W = condensed water
vacuum jacket

G = pickled
PP = contact protection
S = sound protection
W = heat protection
W = heat and sound protection

W = heat and sound protection with
B = electric foreign heating
W = electric foreign heating
E = polyethylen jacket, corrosion protection

Coating:
P = Primer
B = Bitumised
NC = None coating

Category:
3-3 = Goodengineering practice
I = Category I
II = Category II
III = Category III

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DN	Piping		P & I Sheet	Piperouting		Pipe dimension (mm)	Material	max. permitting Operating-		Test Medium	Test Press. (bar ti)	Coating	Heat Tracing	Insulation			Fluidgroup	Category n. 97/23/EG	Flexibility- test	Remarks
	Fluid	Piping No.	Piping classification	from...	to...			Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)				
1100	A	10001	AA10C1		Air inlet V11010	1067	1.0254	1	12	N	1,1	-	-	S			2	I		Modul A
80	EG	10001	AA10C1		TOP 13 Natural Gas BURNER / D73101	88,9	1.0254	6	50	N	6,6	-	-				2	3-3		Tank Farm
600	A	11001	AA10C1		V11040 700 A 11001 AA10C1	610	1.0254	6	96	N	6,6	-	-	S			2	II		Modul A1,D1,E1
700	A	11001	AA10C1		600 A 11001 AA10C1 W13001 (N1)	711	1.0254	6	96	N	6,6	-	-	S			2	II		Modul A1,D1,E1
400	A	11002	AA10C1		600 A 11001 AA10C1 N11001	406,4	1.0254	6	96	N	6,6	-	-	S			2	I		Modul A
300	WC	11003	AA10C2		MAC 500 WC 24301 AA10C2	323,9	1.0254	1	26	W	1,43	-	-				2	3-3		
25	LV	11590	AA10C2		Z11590 (SV) Atmosphere	33,7	1.0254						-							
	WC	11801	AA10C2		W11839 MAC		1.0254						-							COV
50	LV	11802	AA10C1		V11803 Atmosphere	60,3	1.0254	0	60				-				2	3-3		
80	WC	11803	AA10C2		W11706 300WC 11003 AA10C2	88,9	1.0254	1	26	W	1,4	-	-				2	3-3		COV
80	WC	12003	AA10C2		100 WC 14006 AA16C1 W14001 (N6)	88,9	1.0254	1	15	W	1,4	-	-				2	3-3		
700	A	13001	AA10C1		W13001 (N2) A15001	711	1.0254	6	16	N	6,6	-	-	S			2	II		Modul A1,D1,E1



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	Fluid No.	Piping classification		from...	to...			Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)				
700	A	AA10C1	004	700 A 13001 AA10C1	AA15002	711	1.0254	6	16	N	6,6		-	W			2	II		Modul A1,D1,E1
100	A	AA10C1	004	700 A 13001 AA10C1	AA10C1	114,3	1.0254	6	16	N	6,6		-	W			2	3-3		
100	A	AA10C1	004	700 A 13002 AA10C1	AA10C1	114,3	1.0254	6	16	N	6,6		-	W			2	3-3		
150	WC	AA10C2	002	KA12001 (C9)	AA10C2	168,3	1.0254	8	26	W	11,4		-	WE			2	3-3		
200	WC	AA10C2	002	W13001 (N5)	AA10C2	219,1	1.0254	8	26	W	11,4		-	WE			2	3-3		
250	WC	AA10C2	002	150 WC 13020 AA10C2	AA10C2	273	1.0254	8	26	W	11,4		-				2	3-3		
80	WC	AA10C2	002	200 WC 13020 AA10C2	AA10C2	88,9	1.0254	6	27	W	8,6		-	WE			2	3-3		
80	WC	AA10C2	002	150 WC 80010 AA10C2	AA10C2	88,9	1.0254	8	26	W	11,4		-				2	3-3		
80	WC	AA10C2	002	W13001 (N33)	AA10C2	88,9	1.0254	6	16	W	8,6		-				2	3-3		
80	WC	AA10C2	002	LT13013	AA10C2	88,9	1.0254	6	16	W	8,6		-				2	3-3		
80	WC	AA10C2	002	W13001 (N34)	AA10C2	88,9	1.0254	6	16	W	8,6		-				2	3-3		
80	WC	AA10C2	002	W13001 (N31)	AA10C2	88,9	1.0254	6	16	W	8,6		-				2	3-3		
80	WC	AA10C2	002	LT13003	AA10C2	88,9	1.0254	6	16	W	8,6		-				2	3-3		
80	WC	AA10C2	002	LT13003	AA10C2	88,9	1.0254	6	16	W	8,6		-				2	3-3		
150	WC	AA10C2	003	W14001 (N4)	AA10C2	168,3	1.0254	2	15	W	2,9		-	WE			2	3-3		

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Piping		P & I Sheet	Piperouting from... to...		Pipe dimension (mm)	Material	max. permitting Operating- Press. (bar)		Test Medium	Test Press. (bar ti)	Coating	Heat Tracing	Insulation			Fluidgroup	Category n. 97/23/EG	Flexibility-test	Remarks
DN	Fluid	Piping No.	Piping classification				Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)				
100	WC	14002	AA16C1	003	P14100	114,3	16	15	W	22,9	-	-	WE			2	3-3		
				002	KA12001 (E11)														
150	WC	14003	AA10C2	003	150 WC 14001 AA10C2	168,3	2	15	W	2,9	-	-	WE			2	3-3		
				003	P14200														
100	WC	14004	AA16C1	003	P14200	114,3	16	15	W	22,9	-	-	WE			2	3-3		
				003	100 WC 14002 AA16C1														
100	WC	14005	AA16C1	002	100 WC 14002 AA16C1	114,3	16	15	W	22,9	-	-	WE			2	3-3		
				002	100 WC 14006 AA16C1														
100	WC	14006	AA16C1	002	KA12001 (E10)	114,3	16	15	W	22,9	-	-	WE			2	3-3		
				002	W13001 (N4)														
150	WC	14007	AA10C2	003	W14001 (N5)	168,3	2	15	W	2,9	-	-				2	3-3		
				003	Atmosphere														
80	WC	14030	AA10C2	003	W14001 (N32)	88,9	2	15	W	2,9	-	-	WE			2	3-3		
				003	LT14003														
80	WC	14031	AA10C2	003	W14001 (N31)	88,9	2	15	W	2,9	-	-	WE			2	3-3		
				003	LT14003														
700	A	15001	AA10C1	004	A15001	711	6	23	N	6,6	-	-	W			2	II	Modul A1,D1,E1	
				004	F15031														
500	A	15002	AA10C1	006	700 A 15002 AA10C1	508	6	23	N	6,6	-	-				2	I	Modul A	
				009	W20010 - W20040														
700	A	15002	AA10C1	004	F15031	711	6	23	N	6,6	-	-				2	II	Modul A1,D1,E1	
				006	500 A 15002 AA10C1														
700	A	15003	AA10C1	004	A15002	711	6	23	N	6,6	-	-	W			2	II	Modul A1,D1,E1	
				004	700 A 15001 AA10C1														
100	A	15004	AA10C1	004	700 A 15001 AA10C1	114,3	6	23	N	6,6	-	-	W			2	3-3		
				004	700 A 15003 AA10C1														

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Piping				P & I Sheet	Piperouting		Pipe dimension (mm)	Material	max. permitting Operating-		Test Medium	Test Press. (bar ü)	Coating	Heat Tracing	Insulation			Fluidgroup	Category n. 97/23/EG	Flexibility- test	Remarks
DN	Fluid	Piping No.	Piping classification		from...	to...			Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)				
500	A	15005	AA10C1	006	006	700 A 15002 AA10C1 BAC	508	1.0254	6	23	N	6,6	-	-				2	I		Modul A
600	N	15006	AA10C1	005	004	W15001 600 N 15008 AA10C1	610	1.0254	6	200	N	6,6	-	-	W			2	II		Modul A1,D1,E1
600	N	15008	AA10C1	004	004	700 A 15001 AA10C1 700 A 15003 AA10C1	610	1.0254	6	200	N	6,6	-	-	W			2	II		Modul A1,D1,E1
150	A	15009	AA10C1	006	006	500 A 15002 AA10C1 500 A 15002 AA10C1	168,3	1.0254	6	23	N	6,6	-	-				2	3-3		
600	N	15010	AA10C1	004	004	700 A 13001 AA10C1 N15001 (N1)	610	1.0254	6	200	N	6,6	-	-	W			2	II		Modul A1,D1,E1
100	N	15011	AA10C1	004	004	600 N 15010 AA10C1 600 N 15010 AA10C1	114,3	1.0254	6	200	N	6,6	-	-	W			2	3-3		
600	N	15012	AA10C1	004	004	700 A 13002 AA10C1 N15001 (N2)	610	1.0254	6	200	N	6,6	-	-	W			2	II		Modul A1,D1,E1
100	N	15013	AA10C1	004	004	600 N 15012 AA10C1 100 N 15011 AA10C1	114,3	1.0254	6	200	N	6,6	-	-	W			2	3-3		
200	A	15015	AA10C1	004	004	700 A 15002 AA10C1 400 A 15015 AA10C1	219,1	1.0254	6	23	N	6,6	-	-				2	I		Modul A
400	A	15015	AA10C1	004	005	200 A 15015 AA10C1 500 N 20010 AA10C1	406,4	1.0254	6	23	N	6,6	-	-				2	I		Modul A
50	A	15016	AA10C1	004	025	80 A 15018 AA10C1 50 A 15042 AA10C1	60,3	1.0254	6	23	N	6,6	-	-				2	3-3		
50	A	15018	AA10C1	004	004	80 A 15018 AA10C1 25 A 15036 AA10C1	60,3	1.0254	6	23	N	6,6	-	-				2	3-3		
50	A	15018	AA10C1	004	004	80 A 15018 AA10C1 40 A 15031 AA10C1	60,3	1.0254	6	23	N	6,6	-	-				2	3-3		

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								Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)				
80	A	15018	AA10C1	004	200 A 15015 AA10C1	88,9	1.0254	6	23	N	6,6	-	-				2	3-3		
				004	50 A 15018 AA10C1															
25	C	15020	BA25C1	004	A15001	33,7	1.0254	20	100	N	23	-	-				2	3-3		
				004	Drain															
25	C	15021	BA25C1	004	A15002	33,7	1.0254	20	100	N	23	-	-				2	3-3		
				004	Drain															
25	C	15022	BA25C1	005	W15001	33,7	1.0305	20	100	N	23	-	-		W		2	3-3		
				005	Drain															
25	C	15024	BA25C1	005	W15001	33,7	1.0305	20	100	N	23	-	-		W		2	3-3		
				005	25 C 15022 BA25C1															
40	A	15030	AA10C1	004	50 A 15018 AA10C1	48,3	1.0254	6	23	N	6,6	-	-				2	3-3		
				007	Valve V34182															
40	A	15031	AA10C1	004	50 A 15018 AA10C1	48,3	1.0254	6	23	N	6,6	-	-				2	3-3		
				008	Valve V34282															
25	A	15033	AA10C1	004	50 A 15018 AA10C1	33,7	1.0254	6	23	N	6,6	-	-				2	3-3		
				012	Valve V61190															
25	A	15034	AA16C1	004	50 A 15018 AA10C1	33,7	1.0254	6	23	N	6,6	-	-				2	3-3		
				015	Valve V71191															
25	A	15035	AA16C1	015	25 A 15034 AA16C1	33,7	1.0254	6	23	N	6,6	-	-				2	3-3		
				015	Valve V71291															
25	A	15036	AA10C1	004	50 A 15018 AA10C1	33,7	1.0254	6	23	N	6,6	-	-				2	3-3		
				016	Valve V40191															
25	A	15037	AA10C1	012	25 A 15033 AA10C1	33,7	1.0254	6	23	N	6,6	-	-				2	3-3		
				012	Valve V61290															
25	A	15038	AA10C1	004	50 A 15018 AA10C1	33,7	1.0254	6	23	N	6,6	-	-				2	3-3		
				018	Valve V43082															

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								Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)				
50	A	15039	AA10C1	025	50 A 81003 AA10C1	60,3	1.0254	6	20	N	6,6	-	-				2	3-3		
				025	Cold Box															
50	A	15040	AA10C1	025	50 A 15016 AA10C1	60,3	1.0254	6	20	N	6,6	-	-				2	3-3		
				025	Cold Box															
50	A	15041	AA10C1	025	50 A 15016 AA10C1	60,3	1.0254	6	20	N	6,6	-	-				2	3-3		
				025	Molsieve/DCAC/CT/Reg.Heat															
50	A	15042	AA10C1	025	50 A 15016 AA10C1	60,3	1.0254	6	20	N	6,6	-	-				2	3-3		
				025	MAC/BAC/N2-Compressor															
25	A	15043	AA10C1	025	50 A 15040 AA10C1	33,7	1.0254	6	20	N	6,6	-	-				2	3-3		
				025	Expander Turbines															
25	A	15044	AA10C1	025	50 A 15040 AA10C1	33,7	1.0254	6	20	N	6,6	-	-				2	3-3		
				025	Cold Box															
25	A	15045	AA10C1	025	50 A 15040 AA10C1	33,7	1.0254	6	20	N	6,6	-	-				2	3-3		
				025	Analytic Room															
	A	15046	MA_W	018	80 R 43005 MA_W							-	-							CB
				018	Z43032 (SV)															
250	A	16001	AA63C1	006	BAC	273	1.0254	57	25	N	62,7	-	-				2	II		Modul A1,D1,E1
				009	W20010 - W20040															
150	A	16002	AA63C1	006	250 A 16001 AA63C1	168,3	1.0254	57	25	N	62,7	-	-				2	II		Modul A1,D1,E1
				006	N16001															
300	WC	16003	AA10C2	006	VW16001-VW16004	323,9	1.0254	2	23	W	2,9	-	-				2	3-3		
				023	300 WC 11003 AA10C2															
25	A	16004	AA63C1	007	250 A 16001 AA63C1	33,7	1.0254	57	25	N	62,7	-	-				2	3-3		
				029	25 N 81025 AA10C1															
25	A	16005	AA63C1	007	25 A 16004 AA63C1	33,7	1.0254	57	25	N	62,7	-	-				2	3-3		
				030	25 N 81026 AA10C1															

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	Fluid	Piping No.	Piping classification				Press. (bar)	Temp. (°C)					Type	Thickn. (mm)	Weight (kg/m)				
80	LV	16505	AA16C1	006	Z16505 (SV) Atmosphere	88,9	1.0254					-							
50	LV	16801	AA10C1	028	V16803 Atmosphere	60,3	1.0254	0	60			-				2	3-3		
80	WC	16802	AA10C2	028	W16706 300 WC 16003 AA10C2	88,9	1.0254	2	26	W	2,9	-				2	3-3		BAC
	WC	16803	AA10C2	028	W16842 300 WC 16003 AA10C2		1.0254					-							BAC
100	A	20001	MA_W	008	150 A 20001 MA_W ET24201	114,3						-							Expander Turbine 2
150	A	20001	MA_W	009	W20010-W20040 100 A 20001 MA_W	168,3						-							Expander Turbine 2
100	A	20002	MA_W	008	150 A 20001 MA_W ET24101	114,3						-							Expander Turbine 1
100	N	20004	ZB40C1	009	W20010 - W20040 Tank Farm (K20002)	114,3	1.4541	21	24	N	23,2	-				2	I		Modul A
250	O	20006	ZB40C1	009	W20010 - W20040 Tank Farm (K20012)	273	1.4541	28	24	N	33,6	-				1	III		Modul B1+D,B1+ +F,B+E,B+C1,H
400	N	20008	AA10C1	010	600 N 20008 AA10C1 N2 Compressor 1	406,4	1.0254	2	23	N	2,2	-				2	3-3		
600	N	20008	AA10C1	009	W20010 - W20040 400 N 20008 AA10C1	610	1.0254	2	23	N	2,2	-				2	I		Modul A
400	N	20009	AA10C1	010	600 N 20008 AA10C1 N2 Compressor 2	406,4	1.0254	2	23	N	2,2	-				2	3-3		
500	N	20010	AA10C1	005	700 N 20011 AA10C1 500 N 20012 AA10C1	508	1.0254	6	23	N	6,6	-	W			2	I		Modul A

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W=Wasserdrukprüfung, D=Dichtheitsprüfung, P=Druckprüfung