

DESMET - Ballestra								SKETCHES MATERIAL LIST							PROJ:		1E35		REV:	0	16/11/2010			
PUMA5				16/11/2010 10.00.16											DOC:		1E35.65.1102							
DESMET - Ballestra								SABIZ							Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch									
547	150	0	mm	3,96		mm	,00	48,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		770,32											
221	150	0	mm			mm	,00	27,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH) Forged Fe 360 B - UNI 7070	1623	82,62											
1463	150	0	mm	3,96		mm	,00	2,00	NR	129	Elbow a=10° SB-ATI-PC005/0 BW Seamless API 5L Gr.B R=2000mm		4,36											
1517	150	0	mm	3,96		mm	,00	3,00	NR	129	Elbow a=45° SB-ATI-PC005/0 BW Seamless API 5L Gr.B R=2000mm		6,53											
1623	M12	0	mm			mm	40,00	112,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6 UNI 3740 + 4A UNI 3740		8,96											
305	150	0	mm			mm	,00	14,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C													
M Erection													Total Kg:		872,79									
SZ2	PIPING BOM				61007 - 0				A		AREA A		1 / 1		TOTAL Kg:		872,79							

	Plant	SZ2 PIPING BOM	Piping Class	129	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	61007 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	
	Zones					Op tem
						Page 1

DESMET - Ballestra		SKETCHES MATERIAL LIST	PROJ:	1E35	REV:	0	16/11/2010
PUMA5	16/11/2010 10.00.16		DOC:	1E35.65.1102			

DESMET - Ballestra				SABIZ				Size: mm	Thk: mm	Temp: °C	Pres: Bar(g)	Corr: mm
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Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch
547	150	0	mm	3,96		mm	,00	42,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		674,03		
221	150	0	mm			mm	,00	23,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH)	1623	70,38		
											Forged Fe 360 B - UNI 7070				
1517	150	0	mm	3,96		mm	,00	5,00	NR	129	Elbow a=45° SB-ATI-PC005/0 BW Seamless API 5L Gr.B		10,89		
											R=2000mm				
1623	M12	0	mm			mm	40,00	96,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6		7,68		
											UNI 3740 + 4A UNI 3740				
305	150	0	mm			mm	,00	12,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C				
M Erection												Total Kg:	762,98		
SZ2	PIPING BOM						61008 - 0		A	AREA A	1 / 1	TOTAL Kg:	762,98		

	Plant	SZ2 PIPING BOM	Piping Class	129	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	61008 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	
	Zones					Op tem

DESMET - Ballestra		SKETCHES MATERIAL LIST	PROJ:	1E35	REV:	0	16/11/2010
PUMA5	16/11/2010 10.00.17		DOC:	1E35.65.1102			

DESMET - Ballestra				SABIZ				Size: mm	Thk: mm	Temp: °C	Pres: Bar(g)	Corr: mm
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Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch
547	150	0	mm	3,96		mm	,00	41,50	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		666,01		
221	150	0	mm			mm	,00	19,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH)	1623	58,14		
											Forged Fe 360 B - UNI 7070				
1517	150	0	mm	3,96		mm	,00	4,00	NR	129	Elbow a=45° SB-ATI-PC005/0 BW Seamless API 5L Gr.B		8,71		
											R=2000mm				
1623	M12	0	mm			mm	40,00	80,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6		6,40		
											UNI 3740 + 4A UNI 3740				
305	150	0	mm			mm	,00	10,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C				
M Erection												Total Kg:	739,26		
SZ2	PIPING BOM						61009 - 0		A	AREA A	1 / 1	TOTAL Kg:	739,26		

	Plant	SZ2 PIPING BOM	Piping Class	129	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	61009 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra		SKETCHES MATERIAL LIST	PROJ:	1E35	REV:	0	16/11/2010
PUMA5	16/11/2010 10.00.17		DOC:	1E35.65.1102			

DESMET - Ballestra				SABIZ				Size: mm	Thk: mm	Temp: °C	Pres: Bar(g)	Corr: mm
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Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch
547	150	0	mm	3,96		mm	,00	33,50	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		537,62		
221	150	0	mm			mm	,00	29,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH)	1623	88,74		
											Forged Fe 360 B - UNI 7070				
1517	150	0	mm	3,96		mm	,00	5,00	NR	129	Elbow a=45° SB-ATI-PC005/0 BW Seamless API 5L Gr.B		10,89		
											R=2000mm				
1623	M12	0	mm			mm	40,00	120,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6		9,60		
											UNI 3740 + 4A UNI 3740				
305	150	0	mm			mm	,00	15,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C				
M Erection												Total Kg:	646,85		
SZ2	PIPING BOM						61010 - 0		A	AREA A	1 / 1	TOTAL Kg:	646,85		

	Plant	SZ2 PIPING BOM	Piping Class	129	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	61010 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra		SKETCHES MATERIAL LIST	PROJ:	1E35	REV:	0	16/11/2010
PUMA5	16/11/2010 10.00.17		DOC:	1E35.65.1102			

DESMET - Ballestra				SABIZ				Size: mm	Thk: mm	Temp: °C	Pres: Bar(g)	Corr: mm
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Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch
547	150	0	mm	3,96		mm	,00	43,50	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		698,11		
221	150	0	mm			mm	,00	27,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH)	1623	82,62		
											Forged Fe 360 B - UNI 7070				
1517	150	0	mm	3,96		mm	,00	7,00	NR	129	Elbow a=45° SB-ATI-PC005/0 BW Seamless API 5L Gr.B		15,25		
											R=2000mm				
1623	M12	0	mm			mm	40,00	112,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6		8,96		
											UNI 3740 + 4A UNI 3740				
305	150	0	mm			mm	,00	14,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C				
M Erection												Total Kg:	804,93		

SZ2	PIPING BOM		61014 - 0				A		AREA A		1 / 1		TOTAL Kg:	804,93
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	Plant	SZ2 PIPING BOM	Piping Class	129	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	61014 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	
	Zones				Op tem	

DESMET - Ballestra							SKETCHES MATERIAL LIST							PROJ:	1E35	REV:	0	16/11/2010
PUMA5			16/11/2010 10.00.17											DOC:	1E35.65.1102			
DESMET - Ballestra							SABIZ					Size: mm Thk: mm		Temp: °C	Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch			
545	100	0	mm	3,18		mm	,00	11,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		95,85					
546	125	0	mm	3,96		mm	,00	36,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		482,82					
219	100	0	mm			mm	,00	4,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH) Forged Fe 360 B - UNI 7070	1615	7,60					
220	125	0	mm			mm	,00	25,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH) Forged Fe 360 B - UNI 7070	1616	73,25					
641	125	100	mm	3,96	3,18	mm	,00	1,00	NR	129	Reducer Concentric ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB		1,74					
1516	125	0	mm	3,96		mm	,00	7,00	NR	129	Elbow a=45° SB-ATI-PC005/0 BW Seamless API 5L Gr.B R=2000mm		12,75					
1615	M10	0	mm			mm	35,00	8,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6 UNI 3740 + 4A UNI 3740		0,32					
1616	M10	0	mm			mm	40,00	104,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6 UNI 3740 + 4A UNI 3740		5,20					
303	100	0	mm			mm	,00	2,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C							
304	125	0	mm			mm	,00	13,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C							
M Erection												Total Kg:		679,54				
SZ2	PIPING BOM			61018 - 0			A		AREA A		1 / 1		TOTAL Kg:		679,54			

	Plant SZ2 PIPING BOM	Piping Class 129	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
	Line 61018 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Isometric code
	Zones		Op tem

DESMET - Ballestra		SKETCHES MATERIAL LIST	PROJ:	1E35	REV:	0	16/11/2010
PUMA5	16/11/2010 10.00.17		DOC:	1E35.65.1102			

DESMET - Ballestra				SABIZ				Size: mm	Thk: mm	Temp: °C	Pres: Bar(g)	Corr: mm
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Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch
547	150	0	mm	3,96		mm	,00	41,50	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		666,01		
221	150	0	mm			mm	,00	15,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH)	1623	45,90		
											Forged Fe 360 B - UNI 7070				
1517	150	0	mm	3,96		mm	,00	2,00	NR	129	Elbow a=45° SB-ATI-PC005/0 BW Seamless API 5L Gr.B		4,36		
											R=2000mm				
1623	M12	0	mm			mm	40,00	64,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6		5,12		
											UNI 3740 + 4A UNI 3740				
305	150	0	mm			mm	,00	8,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C				
M Erection												Total Kg:	721,38		
SZ2	PIPING BOM						61033 - 0		A	AREA A	1 / 1	TOTAL Kg:	721,38		

	Plant	SZ2 PIPING BOM	Piping Class	129	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	61033 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra								SKETCHES MATERIAL LIST							PROJ:		1E35		REV:	0	16/11/2010			
PUMA5				16/11/2010 10.00.18											DOC:		1E35.65.1102							
DESMET - Ballestra								SABIZ							Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch									
547	150	0	mm	3,96		mm	,00	43,50	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		698,11											
221	150	0	mm			mm	,00	23,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH)	1623	70,38											
											Forged Fe 360 B - UNI 7070													
1463	150	0	mm	3,96		mm	,00	2,00	NR	129	Elbow a=10° SB-ATI-PC005/0 BW Seamless API 5L Gr.B		4,36											
											R=2000mm													
1517	150	0	mm	3,96		mm	,00	3,00	NR	129	Elbow a=45° SB-ATI-PC005/0 BW Seamless API 5L Gr.B		6,53											
											R=2000mm													
1623	M12	0	mm			mm	40,00	96,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6		7,68											
											UNI 3740 + 4A UNI 3740													
305	150	0	mm			mm	,00	12,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C													
M Erection												Total Kg:		787,06										
SZ2	PIPING BOM				61034 - 0				A		AREA A		1 / 1		TOTAL Kg:		787,06							

	Plant	SZ2 PIPING BOM	Piping Class	129	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	61034 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra								SKETCHES MATERIAL LIST						PROJ:	1E35	REV:	0	16/11/2010			
PUMA5				16/11/2010 10.00.18										DOC:	1E35.65.1102						
DESMET - Ballestra								SABIZ						Size: mm		Thk: mm	Temp: °C		Pres: Bar(g)	Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch						
545	100	0	mm	3,18		mm	,00	11,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		95,85								
546	125	0	mm	3,96		mm	,00	41,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		549,88								
219	100	0	mm			mm	,00	4,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH) Forged Fe 360 B - UNI 7070	1615	7,60								
220	125	0	mm			mm	,00	25,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH) Forged Fe 360 B - UNI 7070	1616	73,25								
641	125	100	mm	3,96	3,18	mm	,00	1,00	NR	129	Reducer Concentric ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB		1,74								
1443	125	0	mm	3,96		mm	,00	1,00	NR	129	Elbow a=5° SB-ATI-PC005/0 BW Seamless API 5L Gr.B R=1500mm		1,82								
1462	125	0	mm	3,96		mm	,00	2,00	NR	129	Elbow a=10° SB-ATI-PC005/0 BW Seamless API 5L Gr.B R=2000mm		3,64								
1516	125	0	mm	3,96		mm	,00	2,00	NR	129	Elbow a=45° SB-ATI-PC005/0 BW Seamless API 5L Gr.B R=2000mm		3,64								
1525	125	0	mm	3,96		mm	,00	1,00	NR	129	Elbow a=45° SB-ATI-PC005/0 BW Seamless API 5L Gr.B R=1500mm		1,82								
1615	M10	0	mm			mm	35,00	8,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6 UNI 3740 + 4A UNI 3740		0,32								
1616	M10	0	mm			mm	40,00	104,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6 UNI 3740 + 4A UNI 3740		5,20								
303	100	0	mm			mm	,00	2,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C										
304	125	0	mm			mm	,00	13,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C										
M Erection													Total Kg:		744,78						
SZ2	PIPING BOM				61035 - 0				A	AREA A			1 / 1		TOTAL Kg:		744,78				

	Plant SZ2 PIPING BOM	Piping Class 129	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
	Line 61035 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Isometric code
	Zones		Op tem
			Page 1

DESMET - Ballestra								SKETCHES MATERIAL LIST							PROJ:	1E35		REV:	0	16/11/2010				
PUMA5			16/11/2010 10.00.18												DOC:	1E35.65.1102								
DESMET - Ballestra								SABIZ							Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch									
545	100	0	mm	3,18		mm	,00	11,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		95,85											
546	125	0	mm	3,96		mm	,00	41,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		549,88											
219	100	0	mm			mm	,00	4,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH) Forged Fe 360 B - UNI 7070	1615	7,60											
220	125	0	mm			mm	,00	23,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH) Forged Fe 360 B - UNI 7070	1616	67,39											
641	125	100	mm	3,96	3,18	mm	,00	1,00	NR	129	Reducer Concentric ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB		1,74											
1434	125	0	mm	3,96		mm	,00	1,00	NR	129	Elbow a=5° SB-ATI-PC005/0 BW Seamless API 5L Gr.B R=2000mm		1,82											
1516	125	0	mm	3,96		mm	,00	3,00	NR	129	Elbow a=45° SB-ATI-PC005/0 BW Seamless API 5L Gr.B R=2000mm		5,46											
1615	M10	0	mm			mm	35,00	8,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6 UNI 3740 + 4A UNI 3740		0,32											
1616	M10	0	mm			mm	40,00	96,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6 UNI 3740 + 4A UNI 3740		4,80											
303	100	0	mm			mm	,00	2,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C													
304	125	0	mm			mm	,00	12,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C													
M Erection												Total Kg:		734,87										
SZ2	PIPING BOM					61036 - 0					A	AREA A	1 / 1		TOTAL Kg:		734,87							

	Plant SZ2 PIPING BOM	Piping Class 129	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
	Line 61036 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Isometric code
	Zones		Op tem
			Page 1

DESMET - Ballestra		SKETCHES MATERIAL LIST	PROJ:	1E35	REV:	0	16/11/2010
PUMA5	16/11/2010 10.00.18		DOC:	1E35.65.1102			

DESMET - Ballestra				SABIZ				Size: mm	Thk: mm	Temp: °C	Pres: Bar(g)	Corr: mm
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Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch
545	100	0	mm	3,18		mm	,00	11,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		95,85		
546	125	0	mm	3,96		mm	,00	40,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		536,47		
219	100	0	mm			mm	,00	4,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH)	1615	7,60		
											Forged Fe 360 B - UNI 7070				
220	125	0	mm			mm	,00	25,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH)	1616	73,25		
											Forged Fe 360 B - UNI 7070				
641	125	100	mm	3,96	3,18	mm	,00	1,00	NR	129	Reducer Concentric ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB		1,74		
1462	125	0	mm	3,96		mm	,00	2,00	NR	129	Elbow a=10° SB-ATI-PC005/0 BW Seamless API 5L Gr.B		3,64		
											R=2000mm				
1516	125	0	mm	3,96		mm	,00	2,00	NR	129	Elbow a=45° SB-ATI-PC005/0 BW Seamless API 5L Gr.B		3,64		
											R=2000mm				
1525	125	0	mm	3,96		mm	,00	2,00	NR	129	Elbow a=45° SB-ATI-PC005/0 BW Seamless API 5L Gr.B		3,64		
											R=1500mm				
1615	M10	0	mm			mm	35,00	8,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6		0,32		
											UNI 3740 + 4A UNI 3740				
1616	M10	0	mm			mm	40,00	104,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6		5,20		
											UNI 3740 + 4A UNI 3740				
303	100	0	mm			mm	,00	2,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C				
304	125	0	mm			mm	,00	13,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C				
M Erection												Total Kg:	731,36		

SZ2	PIPING BOM	61037 - 0	A	AREA A	1 / 1	TOTAL Kg:	731,36
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	Plant SZ2 PIPING BOM	Piping Class 129	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
	Line 61037 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Isometric code
	Zones		Op tem

DESMET - Ballestra								SKETCHES MATERIAL LIST						PROJ:	1E35	REV:	0	16/11/2010
PUMA5				16/11/2010 10.00.18										DOC:	1E35.65.1102			
DESMET - Ballestra								SABIZ						Size: mm	Thk: mm	Temp: °C	Pres: Bar(g)	Corr: mm
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch			
545	100	0	mm	3,18		mm	,00	11,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		95,85					
546	125	0	mm	3,96		mm	,00	41,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		549,88					
219	100	0	mm			mm	,00	4,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH) Forged Fe 360 B - UNI 7070	1615	7,60					
220	125	0	mm			mm	,00	27,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH) Forged Fe 360 B - UNI 7070	1616	79,11					
641	125	100	mm	3,96	3,18	mm	,00	1,00	NR	129	Reducer Concentric ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB		1,74					
1462	125	0	mm	3,96		mm	,00	2,00	NR	129	Elbow a=10° SB-ATI-PC005/0 BW Seamless API 5L Gr.B R=2000mm		3,64					
1516	125	0	mm	3,96		mm	,00	2,00	NR	129	Elbow a=45° SB-ATI-PC005/0 BW Seamless API 5L Gr.B R=2000mm		3,64					
1525	125	0	mm	3,96		mm	,00	2,00	NR	129	Elbow a=45° SB-ATI-PC005/0 BW Seamless API 5L Gr.B R=1500mm		3,64					
1615	M10	0	mm			mm	35,00	8,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6 UNI 3740 + 4A UNI 3740		0,32					
1616	M10	0	mm			mm	40,00	112,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6 UNI 3740 + 4A UNI 3740		5,60					
303	100	0	mm			mm	,00	2,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C							
304	125	0	mm			mm	,00	14,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C							
M Erection													Total Kg:		751,04			
SZ2	PIPING BOM				61038 - 0				A	AREA A			1 / 1		TOTAL Kg:		751,04	

	Plant SZ2 PIPING BOM	Piping Class 129	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
	Line 61038 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Isometric code
	Zones		Op tem
			Page 1

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:	0	16/11/2010			
PUMA5			16/11/2010 10.00.19										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch							
600	200	0	mm	3,0		mm	,00	2,00	m	124	Pipe SB-ATI-PT002/0 PL Welded Fe 360 B - UNI 7070		31,97									
1326	200	0	mm	3,0		mm	,00	1,00	NR	124	45° Miter SB-ATI-PC003/0 BE Welded Fe 360 B - UNI 7070 R=1.5 D		4,08									
M Erection													Total Kg:		36,05							
SZ2	PIPING BOM				62005 - 0				A		AREA A		1 / 1		TOTAL Kg:		36,05					

62Y12	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
	Line 62005 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Op tem
	Zones		Isometric code

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DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0	16/11/2010				
PUMA5			16/11/2010 10.00.19										DOC:		1E35.65.1102									
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm			
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch									
600	200	0	mm	3,0		mm	,00	3,00	m	124	Pipe SB-ATI-PT002/0 PL Welded Fe 360 B - UNI 7070		47,96											
1326	200	0	mm	3,0		mm	,00	2,00	NR	124	45° Miter SB-ATI-PC003/0 BE Welded Fe 360 B - UNI 7070 R=1.5 D		8,16											
M Erection													Total Kg:		56,12									
SZ2	PIPING BOM						62006 - 0			A	AREA A		1 / 1		TOTAL Kg:		56,12							

62Y13	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
	Line 62006 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Isometric code
	Zones		Op tem
			Page 1

DESMET - Ballestra								SKETCHES MATERIAL LIST					PROJ: 1E35		REV: 0		16/11/2010					
PUMA5				16/11/2010 10.00.19									DOC: 1E35.65.1102									
DESMET - Ballestra								SABIZ					Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch							
568	150	0	mm	3,96		mm	,00	3,00	m	124	Pipe ASME B36.10 PL E.R.W. API 5L Gr.B		48,15									
27	150	0	mm	3,96		mm	,00	1,00	NR	124	45° Elbow Long Radius ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB		2,85									
M Erection												Total Kg:		51,								
SZ2	PIPING BOM						62007 - 0				A	AREA A	1 / 1		TOTAL Kg:		51,					

62Y14	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
	Line 62007 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Isometric code
	Zones		Op tem
			Page 1

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:	1E35		REV:	0	16/11/2010		
PUMA5			16/11/2010 10.00.20										DOC:	1E35.65.1102						
DESMET - Ballestra							SABIZ						Size: mm	Thk: mm	Temp: °C	Pres: Bar(g)	Corr: mm			
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component					Gen. Bolt	Weight (Kg)	As.bly	Branch	
600	200	0	mm	3,0		mm	,00	5,00	m	124	Pipe SB-ATI-PT002/0 PL Welded Fe 360 B - UNI 7070						79,94			
1213	200	0	mm	3,0		mm	,00	1,00	NR	124	90° Miter SB-ATI-PC003/0 BE Welded Fe 360 B - UNI 7070 R=1.5 D						7,50			
1326	200	0	mm	3,0		mm	,00	4,00	NR	124	45° Miter SB-ATI-PC003/0 BE Welded Fe 360 B - UNI 7070 R=1.5 D						16,32			
M Erection																Total Kg:	103,76			
SZ2	PIPING BOM				62008 - 0				A		AREA A		1 / 1		TOTAL Kg:	103,76				

62Y15	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
	Line 62008 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Op tem
	Zones		Isometric code
			Page 1

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5			16/11/2010 10.00.20										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch	
600	200	0	mm	3,0		mm	,00	3,00	m	124	Pipe SB-ATI-PT002/0 PL Welded Fe 360 B - UNI 7070							47,96				
M Erection																Total Kg:		47,96				
SZ2	PIPING BOM			62009 - 0				A		AREA A		1 / 1		TOTAL Kg:		47,96						

62Y16	Plant	SZ2 PIPING BOM	Piping Class	124	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	62009 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5			16/11/2010 10.00.20										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch	
602	300	0	mm	3,0		mm	,00	2,00	m	124	Pipe SB-ATI-PT002/0 PL Welded Fe 360 B - UNI 7070							47,47				
M Erection																Total Kg:		47,47				
SZ2	PIPING BOM				62010 - 0				A		AREA A				1 / 1		TOTAL Kg:		47,47			

62Y1	Plant	SZ2 PIPING BOM	Piping Class	124	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	62010 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra							SKETCHES MATERIAL LIST							PROJ:		1E35		REV:		0		16/11/2010	
PUMA5				16/11/2010 10.00.20										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ							Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch		
602	300	0	mm	3,0		mm	,00	1,50	m	124	Pipe SB-ATI-PT002/0 PL Welded Fe 360 B - UNI 7070							35,60					
M Erection																Total Kg:		35,6					
SZ2	PIPING BOM			62011 - 0			A		AREA A		1 / 1		TOTAL Kg:		35,6								

62Y2	Plant	SZ2 PIPING BOM	Piping Class	124	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	62011 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5			16/11/2010 10.00.21										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch	
602	300	0	mm	3,0		mm	,00	1,50	m	124	Pipe SB-ATI-PT002/0 PL Welded Fe 360 B - UNI 7070							35,60				
M Erection																Total Kg:		35,6				
SZ2	PIPING BOM			62012 - 0				A		AREA A		1 / 1		TOTAL Kg:		35,6						

62Y3	Plant	SZ2 PIPING BOM	Piping Class	124	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	62012 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010		
PUMA5				16/11/2010 10.00.21									DOC:		1E35.65.1102								
DESMET - Ballestra								SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch								
600	200	0	mm	3,0		mm	,00	2,00	m	124	Pipe SB-ATI-PT002/0 PL Welded Fe 360 B - UNI 7070		31,97										
M Erection													Total Kg:		31,97								
SZ2	PIPING BOM			62013 - 0			A		AREA A		1 / 1		TOTAL Kg:		31,97								

62Y4	Plant	SZ2 PIPING BOM	Piping Class	124	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	62013 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra								SKETCHES MATERIAL LIST							PROJ:	1E35	REV:	0	16/11/2010			
PUMA5			16/11/2010 10.00.21												DOC:	1E35.65.1102						
DESMET - Ballestra								SABIZ						Size: mm		Thk: mm	Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component					Gen. Bolt	Weight (Kg)		As.bly	Branch		
565	80	0	mm	3,18		mm	,00	25,00	m	124	Pipe ASME B36.10 PL E.R.W. API 5L Gr.B						168,05					
1170	80	0	mm			mm	,00	1,00	NR	124	Valve Butterfly SB-ATI-VB004/0 FLG * SB-ATI-PF001(125÷250AARH) Forged or cast ASTM A 105 or ASTM A 216 WCB B 60					1609						
171	80	0	mm			mm	,00	1,00	NR	124	Flange Slip-On SB-ATI-PF001/0 * SB-ATI-PF001(125÷250AARH) From Plate Fe 360 B - UNI 7070					1609						
24	80	0	mm	3,18		mm	,00	1,00	NR	124	45° Elbow Long Radius ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB						0,60					
58	80	0	mm	3,18		mm	,00	3,00	NR	124	90° Elbow Long Radius ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB						3,53					
1609	M8	0	mm			mm	30,00	8,00	NR	124	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6 UNI 3740 + 4A UNI 3740						0,16					
274	80	0	mm			mm	,00	2,00	NR	124	Gasket SB-ATI-PV009/1 * SB-ATI-PF001(125÷250AARH) _ A9C FLAT-RING											
M Erection															Total Kg:		172,35					
SZ2	PIPING BOM			62028 - 0					A	AREA A			1 / 1		TOTAL Kg:		172,35					

	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0		
	Line 62028 - 0	Fluid	System		
	Dang. fluid type	Coating	De pres		
	Area AREA A	Sketch Sht 1 / 1	Isometric code		
	Zones		Op tem		
					Page 1

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5			16/11/2010 10.00.21										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch	
600	200	0	mm	3,0		mm	,00	2,00	m	124	Pipe SB-ATI-PT002/0 PL Welded Fe 360 B - UNI 7070							31,97				
M Erection																Total Kg:		31,97				
SZ2	PIPING BOM				62030 - 0				A		AREA A				1 / 1		TOTAL Kg:		31,97			

62Y5	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0		
	Line 62030 - 0	Fluid	System		
	Dang. fluid type	Coating	De pres		
	Area AREA A	Sketch Sht 1 / 1	Op tem		
	Zones		Isometric code		

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DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5			16/11/2010 10.00.22										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch	
568	150	0	mm	3,96		mm	,00	1,50	m	124	Pipe ASME B36.10 PL E.R.W. API 5L Gr.B							24,07				
M Erection																Total Kg:		24,07				
SZ2	PIPING BOM			62031 - 0				A		AREA A		1 / 1		TOTAL Kg:		24,07						

62Y6	Plant	SZ2 PIPING BOM	Piping Class	124	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	62031 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra								SKETCHES MATERIAL LIST						PROJ:		1E35		REV:	0	16/11/2010			
PUMA5				16/11/2010 10.00.22										DOC:		1E35.65.1102							
DESMET - Ballestra								SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch								
568	150	0	mm	3,96		mm	,00	1,50	m	124	Pipe ASME B36.10 PL E.R.W. API 5L Gr.B		24,07										
M Erection													Total Kg:		24,07								
SZ2	PIPING BOM						62034 - 0				A	AREA A	1 / 1		TOTAL Kg:		24,07						

62Y6A	Plant	SZ2 PIPING BOM	Piping Class	124	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	62034 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:	0	16/11/2010			
PUMA5			16/11/2010 10.00.22										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch							
602	300	0	mm	3,0		mm	,00	5,50	m	124	Pipe SB-ATI-PT002/0 PL Welded Fe 360 B - UNI 7070		130,53									
975	300	200	mm	3,0	3,0	mm	,00	1,00	NR	124	Reducer Eccentric SB-ATI-PR005/0 BE Welded Fe 360 B - UNI 7070		4,74									
M Erection													Total Kg:		135,27							
SZ2	PIPING BOM						62040 - 0				A	AREA A		1 / 1		TOTAL Kg:		135,27				

	Plant	SZ2 PIPING BOM	Piping Class	124	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	62040 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra		SKETCHES MATERIAL LIST	PROJ:	1E35	REV:	0	16/11/2010
PUMA5	16/11/2010 10.00.23		DOC:	1E35.65.1102			

DESMET - Ballestra				SABIZ				Size: mm	Thk: mm	Temp: °C	Pres: Bar(g)	Corr: mm
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Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch	
565	80	0	mm	3,18		mm	,00	6,00	m	124	Pipe ASME B36.10 PL E.R.W. API 5L Gr.B		40,33			
1170	80	0	mm			mm	,00	1,00	NR	124	Valve Butterfly SB-ATI-VB004/0 FLG * SB-ATI-PF001(125÷250AARH) Forged or cast ASTM A 105 or ASTM A 216 WCB B 60	1609				
171	80	0	mm			mm	,00	3,00	NR	124	Flange Slip-On SB-ATI-PF001/0 * SB-ATI-PF001(125÷250AARH) From Plate Fe 360 B - UNI 7070	1609				
58	80	0	mm	3,18		mm	,00	1,00	NR	124	90° Elbow Long Radius ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB		1,18			
1609	M8	0	mm			mm	30,00	12,00	NR	124	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6 UNI 3740 + 4A UNI 3740		0,24			
274	80	0	mm			mm	,00	3,00	NR	124	Gasket SB-ATI-PV009/1 * SB-ATI-PF001(125÷250AARH) _ A9C FLAT-RING					
M Erection												Total Kg:		41,75		
SZ2	PIPING BOM				62051 - 0				A	AREA A		1 / 1		TOTAL Kg:		41,75

	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
	Line 62051 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Isometric code
	Zones		Op tem
			Page 1

DESMET - Ballestra		SKETCHES MATERIAL LIST	PROJ:	1E35	REV:	0	16/11/2010
PUMAS	16/11/2010 10.00.23		DOC:	1E35.65.1102			

DESMET - Ballestra				SABIZ				Size: mm	Thk: mm	Temp: °C	Pres: Bar(g)	Corr: mm
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Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch
558	50	0	mm	3,91		mm	,00	0,50	m	126	Pipe ASME B36.10 PL Seamless ASTM A 106 Gr. B		2,72		
561	100	0	mm	6,02		mm	,00	7,00	m	126	Pipe ASME B36.10 PL Seamless ASTM A 106 Gr. B		112,52		
563	150	0	mm	10,97		mm	,00	37,00	m	126	Pipe ASME B36.10 PL Seamless ASTM A 106 Gr. B		1.574,75		
1133	50	0	mm			mm	,00	1,00	NR	126	Valve Ball Full Port SB-ATI-VS070/0 LUG 600 LB LF (125÷250 AARH) Forged CARBON STEEL S 148	1649	15,50		
139	50	0	mm			mm	,00	2,00	NR	126	Flange Slip-On ASME B16.5 600 LB LM (125÷250 AARH) Forged ASTM A 105	1577	7,40		
142	100	0	mm			mm	,00	2,00	NR	126	Flange Slip-On ASME B16.5 600 LB LM (125÷250 AARH) Forged ASTM A 105	1581	23,60		
153	100	0	mm			mm	,00	1,00	NR	126	Flange Slip-On ASME B16.5 600 LB LF (125÷250 AARH) Forged ASTM A 105	1581	11,80		
72	100	0	mm	6,02		mm	,00	2,00	NR	126	90° Elbow Long Radius ASME B16.9 BE Wrought S ASTM A 234 Gr. WPB		7,83		
74	150	0	mm	10,97		mm	,00	8,00	NR	126	90° Elbow Long Radius ASME B16.9 BE Wrought S ASTM A 234 Gr. WPB		125,50		
690	150	100	mm	10,97	6,02	mm	,00	3,00	NR	126	Reducer Concentric ASME B16.9 BE Wrought S ASTM A 234 Gr. WPB		18,10		
1933	150	100	mm	10,97	6,02	mm	,00	1,00	NR	126	Reducer Eccentric ASME B16.9 BE Wrought S ASTM A 234 Gr. WPB		6,03		
398	15	0	mm			mm	,00	2,00	NR	126	Coupling SB-ATI-PR008/0 THRD-F NPT 3000# Forged ASTM A 105		0,24		
1581	7/8	0	mm			mm	145,00	24,00	NR	126	Stud Bolt + 2 Nuts SB-ATI-PV008B/0 ASME B18.2.1 UNC/2.2 Tab.9 ASTM A 193 B7 / A 194 Gr.2H		15,84		
246	50	0	mm			mm	,00	2,00	NR	126	Gasket SB-ATI-PV009/1 600 LB _ B4C				
249	100	0	mm			mm	,00	3,00	NR	126	Gasket SB-ATI-PV009/1 600 LB _ B4C				
1649	5/8	0	mm			mm	55,00	16,00	NR	126	Screws for valves ASME B 18.2.1/UNC ASTM A 193 B7		2,72		
M Erection												Total Kg:	1924,55		

FT_64.1 PT_63.10	Plant SZ2 PIPING BOM	Piping Class 126	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0		
	Line 63031 - 0	Fluid	System		
	Dang. fluid type	Coating	De pres		
	Area AREA A	Sketch Sht 1 / 1	Op tem		
	Zones		Isometric code		

DESMET - Ballestra				SKETCHES MATERIAL LIST								PROJ: 1E35		REV: 0		16/11/2010					
PUMA5		16/11/2010 10.00.23										DOC: 1E35.65.1102									
DESMET - Ballestra						SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component					Gen. Bolt	Weight (Kg)	As.bly	Branch		
SZ2	PIPING BOM				63031 - 0					A	AREA A					1 / 1	TOTAL Kg:	1924,55			

FT_64.1	Plant SZ2 PIPING BOM	Piping Class 126	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
PT_63.10	Line 63031 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Op tem
	Zones		Isometric code
			Page 2

DESMET - Ballestra							SKETCHES MATERIAL LIST							PROJ:	1E35	REV:	0	16/11/2010
PUMA5			16/11/2010 10.00.23											DOC:	1E35.65.1102			
DESMET - Ballestra							SABIZ					Size: mm	Thk: mm	Temp: °C	Pres: Bar(g)	Corr: mm		
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch			
555	25	0	mm	3,38		mm	,00	1,00	m	126	Pipe ASME B36.10 PL Seamless ASTM A 106 Gr. B		2,50					
561	100	0	mm	6,02		mm	,00	9,50	m	126	Pipe ASME B36.10 PL Seamless ASTM A 106 Gr. B		152,71					
1130	25	0	mm			mm	,00	1,00	NR	126	Valve Ball Full Port SB-ATI-VS070/0 LUG 600 LB LF (125÷250 AARH) Forged CARBON STEEL S 148	1648	6,20					
136	25	0	mm			mm	,00	2,00	NR	126	Flange Slip-On ASME B16.5 600 LB LM (125÷250 AARH) Forged ASTM A 105	1575	3,20					
142	100	0	mm			mm	,00	2,00	NR	126	Flange Slip-On ASME B16.5 600 LB LM (125÷250 AARH) Forged ASTM A 105	1581	23,60					
66	25	0	mm	3,38		mm	,00	1,00	NR	126	90° Elbow Long Radius ASME B16.9 BE Wrought S ASTM A 234 Gr. WPB		0,14					
72	100	0	mm	6,02		mm	,00	1,00	NR	126	90° Elbow Long Radius ASME B16.9 BE Wrought S ASTM A 234 Gr. WPB		3,91					
1581	7/8	0	mm			mm	145,00	16,00	NR	126	Stud Bolt + 2 Nuts SB-ATI-PV008B/0 ASME B18.2.1 UNC/2.2 Tab.9 ASTM A 193 B7 / A 194 Gr.2H		10,56					
243	25	0	mm			mm	,00	2,00	NR	126	Gasket SB-ATI-PV009/1 600 LB _ B4C							
249	100	0	mm			mm	,00	2,00	NR	126	Gasket SB-ATI-PV009/1 600 LB _ B4C							
1648	5/8	0	mm			mm	50,00	8,00	NR	126	Screws for valves ASME B 18.2.1/UNC ASTM A 193 B7		1,28					
M Erection												Total Kg:	204,1					
SZ2	PIPING BOM			63032 - 0			A		AREA A		1 / 1		TOTAL Kg:	204,1				

HV_63.3A
PSV_63.1

Plant SZ2 PIPING BOM

Line 63032 - 0
Dang. fluid type
Area AREA A
Zones

Piping Class 126

Fluid
Coating
Sketch Sht 1 / 1

Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0

System
De pres
Isometric code

Op tem

Page 1

DESMET - Ballestra							SKETCHES MATERIAL LIST							PROJ:	1E35		REV:	0	16/11/2010	
PUMA5			16/11/2010 10.00.23											DOC:	1E35.65.1102					
DESMET - Ballestra							SABIZ					Size: mm Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm		
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch					
555	25	0	mm	3,38		mm	,00	1,00	m	126	Pipe ASME B36.10 PL Seamless ASTM A 106 Gr. B		2,50							
561	100	0	mm	6,02		mm	,00	6,00	m	126	Pipe ASME B36.10 PL Seamless ASTM A 106 Gr. B		96,45							
1130	25	0	mm			mm	,00	1,00	NR	126	Valve Ball Full Port SB-ATI-VS070/0 LUG 600 LB LF (125÷250 AARH) Forged CARBON STEEL S 148	1648	6,20							
136	25	0	mm			mm	,00	2,00	NR	126	Flange Slip-On ASME B16.5 600 LB LM (125÷250 AARH) Forged ASTM A 105	1575	3,20							
142	100	0	mm			mm	,00	2,00	NR	126	Flange Slip-On ASME B16.5 600 LB LM (125÷250 AARH) Forged ASTM A 105	1581	23,60							
66	25	0	mm	3,38		mm	,00	1,00	NR	126	90° Elbow Long Radius ASME B16.9 BE Wrought S ASTM A 234 Gr. WPB		0,14							
72	100	0	mm	6,02		mm	,00	1,00	NR	126	90° Elbow Long Radius ASME B16.9 BE Wrought S ASTM A 234 Gr. WPB		3,91							
1581	7/8	0	mm			mm	145,00	16,00	NR	126	Stud Bolt + 2 Nuts SB-ATI-PV008B/0 ASME B18.2.1 UNC/2.2 Tab.9 ASTM A 193 B7 / A 194 Gr.2H		10,56							
243	25	0	mm			mm	,00	2,00	NR	126	Gasket SB-ATI-PV009/1 600 LB _ B4C									
249	100	0	mm			mm	,00	2,00	NR	126	Gasket SB-ATI-PV009/1 600 LB _ B4C									
1648	5/8	0	mm			mm	50,00	8,00	NR	126	Screws for valves ASME B 18.2.1/UNC ASTM A 193 B7		1,28							
M Erection												Total Kg:		147,84						
SZ2	PIPING BOM				63035 - 0				A	AREA A		1 / 1		TOTAL Kg:		147,84				

HV_63.3B
PSV_63.2

Plant SZ2 PIPING BOM

Line 63035 - 0
Dang. fluid type
Area AREA A
Zones

Piping Class 126

Fluid
Coating
Sketch Sht 1 / 1

Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0

System
De pres
Isometric code

Op tem

Page 1

DESMET - Ballestra							SKETCHES MATERIAL LIST							PROJ:	1E35		REV:	0	16/11/2010				
PUMA5			16/11/2010 10.00.24											DOC:	1E35.65.1102								
DESMET - Ballestra							SABIZ							Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch								
555	25	0	mm	3,38		mm	,00	1,00	m	126	Pipe ASME B36.10 PL Seamless ASTM A 106 Gr. B		2,50										
561	100	0	mm	6,02		mm	,00	3,00	m	126	Pipe ASME B36.10 PL Seamless ASTM A 106 Gr. B		48,22										
1130	25	0	mm			mm	,00	1,00	NR	126	Valve Ball Full Port SB-ATI-VS070/0 LUG 600 LB LF (125÷250 AARH) Forged CARBON STEEL S 148	1648	6,20										
136	25	0	mm			mm	,00	2,00	NR	126	Flange Slip-On ASME B16.5 600 LB LM (125÷250 AARH) Forged ASTM A 105	1575	3,20										
142	100	0	mm			mm	,00	2,00	NR	126	Flange Slip-On ASME B16.5 600 LB LM (125÷250 AARH) Forged ASTM A 105	1581	23,60										
66	25	0	mm	3,38		mm	,00	1,00	NR	126	90° Elbow Long Radius ASME B16.9 BE Wrought S ASTM A 234 Gr. WPB		0,14										
72	100	0	mm	6,02		mm	,00	1,00	NR	126	90° Elbow Long Radius ASME B16.9 BE Wrought S ASTM A 234 Gr. WPB		3,91										
1581	7/8	0	mm			mm	145,00	16,00	NR	126	Stud Bolt + 2 Nuts SB-ATI-PV008B/0 ASME B18.2.1 UNC/2.2 Tab.9 ASTM A 193 B7 / A 194 Gr.2H		10,56										
243	25	0	mm			mm	,00	2,00	NR	126	Gasket SB-ATI-PV009/1 600 LB _ B4C												
249	100	0	mm			mm	,00	2,00	NR	126	Gasket SB-ATI-PV009/1 600 LB _ B4C												
1648	5/8	0	mm			mm	50,00	8,00	NR	126	Screws for valves ASME B 18.2.1/UNC ASTM A 193 B7		1,28										
M Erection												Total Kg:		99,61									
SZ2	PIPING BOM				63039 - 0				A	AREA A		1 / 1		TOTAL Kg:		99,61							

HV_63.3C
PSV_63.3

Plant SZ2 PIPING BOM

Line 63039 - 0
Dang. fluid type
Area AREA A
Zones

Piping Class 126

Fluid
Coating
Sketch Sht 1 / 1

Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0

System
De pres
Isometric code

Op tem

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DESMET - Ballestra		SKETCHES MATERIAL LIST	PROJ:	1E35	REV:	0	16/11/2010
PUMA5	16/11/2010 10.00.24		DOC:	1E35.65.1102			

DESMET - Ballestra				SABIZ				Size: mm	Thk: mm	Temp: °C	Pres: Bar(g)	Corr: mm
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Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch
561	100	0	mm	6,02		mm	,00	2,50	m	126	Pipe ASME B36.10 PL Seamless ASTM A 106 Gr. B		40,19		
153	100	0	mm			mm	,00	1,00	NR	126	Flange Slip-On ASME B16.5 600 LB LF (125÷250 AARH) Forged ASTM A 105	1581	11,80		
72	100	0	mm	6,02		mm	,00	1,00	NR	126	90° Elbow Long Radius ASME B16.9 BE Wrought S ASTM A 234 Gr. WPB		3,91		
1581	7/8	0	mm			mm	145,00	8,00	NR	126	Stud Bolt + 2 Nuts SB-ATI-PV008B/0 ASME B18.2.1 UNC/2.2 Tab.9 ASTM A 193 B7 / A 194 Gr.2H		5,28		
249	100	0	mm			mm	,00	1,00	NR	126	Gasket SB-ATI-PV009/1 600 LB _ B4C				
M Erection												Total Kg:	61,18		
SZ2	PIPING BOM				64020 - 0				A	AREA A	1 / 1	TOTAL Kg:	61,18		

	Plant SZ2 PIPING BOM	Piping Class 126	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
	Line 64020 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Isometric code
	Zones		Op tem

DESMET - Ballestra		SKETCHES MATERIAL LIST	PROJ:	1E35	REV:	0	16/11/2010
PUMA5	16/11/2010 10.00.24		DOC:	1E35.65.1102			

DESMET - Ballestra				SABIZ				Size: mm	Thk: mm	Temp: °C	Pres: Bar(g)	Corr: mm
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Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch
544	80	0	mm	3,18		mm	,00	10,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		67,22		
218	80	0	mm			mm	,00	6,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH)	1615	10,32		
											Forged Fe 360 B - UNI 7070				
1550	80	0	mm	3,18		mm	,00	2,00	NR	129	Elbow a=90° SB-ATI-PC005/0 BW Seamless API 5L Gr.B		1,84		
											R=1500mm				
1615	M10	0	mm			mm	35,00	12,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6		0,48		
											UNI 3740 + 4A UNI 3740				
302	80	0	mm			mm	,00	3,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C				
M Erection												Total Kg:	79,87		
SZ2	PIPING BOM						64025 - 0		A	AREA A	1 / 1	TOTAL Kg:	79,87		

64Y23	Plant SZ2 PIPING BOM	Piping Class 129	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
	Line 64025 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Isometric code
	Zones		Op tem

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5			16/11/2010 10.00.24										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch	
600	200	0	mm	3,0		mm	,00	1,00	m	124	Pipe SB-ATI-PT002/0 PL Welded Fe 360 B - UNI 7070							15,99				
M Erection															Total Kg:		15,99					
SZ2	PIPING BOM			64032 - 0				A		AREA A		1 / 1		TOTAL Kg:		15,99						

64Y18	Plant	SZ2 PIPING BOM	Piping Class	124	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	64032 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra		SKETCHES MATERIAL LIST	PROJ:	1E35	REV:	0	16/11/2010
PUMA5	16/11/2010 10.00.25		DOC:	1E35.65.1102			

DESMET - Ballestra				SABIZ				Size: mm	Thk: mm	Temp: °C	Pres: Bar(g)	Corr: mm
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Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch
544	80	0	mm	3,18		mm	,00	10,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		67,22		
218	80	0	mm			mm	,00	9,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH) Forged Fe 360 B - UNI 7070	1615	15,48		
1523	80	0	mm	3,18		mm	,00	2,00	NR	129	Elbow a=45° SB-ATI-PC005/0 BW Seamless API 5L Gr.B R=1500mm		1,84		
1615	M10	0	mm			mm	35,00	20,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6 UNI 3740 + 4A UNI 3740		0,80		
302	80	0	mm			mm	,00	5,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C				
M Erection												Total Kg:	85,35		

SZ2	PIPING BOM		64040 - 0		A	AREA A	1 / 1		TOTAL Kg:	85,35
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64Y33	Plant	SZ2 PIPING BOM	Piping Class	129	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0	
	Line	64040 - 0	Fluid		System		
	Dang. fluid type		Coating		De pres	Op tem	
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1	
	Zones						

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ: 1E35		REV: 0		16/11/2010				
PUMA5			16/11/2010 10.00.25										DOC: 1E35.65.1102								
DESMET - Ballestra							SABIZ						Size: mm Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm		
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component					Gen. Bolt	Weight (Kg)		As.bly	Branch	
600	200	0	mm	3,0		mm	,00	4,00	m	124	Pipe SB-ATI-PT002/0 PL Welded Fe 360 B - UNI 7070						63,95				
1213	200	0	mm	3,0		mm	,00	1,00	NR	124	90° Miter SB-ATI-PC003/0 BE Welded Fe 360 B - UNI 7070 R=1.5 D						7,50				
1326	200	0	mm	3,0		mm	,00	1,00	NR	124	45° Miter SB-ATI-PC003/0 BE Welded Fe 360 B - UNI 7070 R=1.5 D						4,08				
M Erection															Total Kg:		75,53				
SZ2	PIPING BOM						64133 - 0				A	AREA A				1 / 1		TOTAL Kg:		75,53	

64Y26	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
	Line 64133 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Isometric code
	Zones		Op tem

DESMET - Ballestra								SKETCHES MATERIAL LIST					PROJ: 1E35		REV: 0		16/11/2010					
PUMA5				16/11/2010 10.00.25									DOC: 1E35.65.1102									
DESMET - Ballestra								SABIZ					Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch							
600	200	0	mm	3,0		mm	,00	14,00	m	124	Pipe SB-ATI-PT002/0 PL Welded Fe 360 B - UNI 7070		223,82									
761	200	125	mm	3,0	3,96	mm	,00	2,00	NR	124	Reducer Concentric SB-ATI-PR005/0 BE Welded Fe 360 B - UNI 7070											
1326	200	0	mm	3,0		mm	,00	2,00	NR	124	45° Miter SB-ATI-PC003/0 BE Welded Fe 360 B - UNI 7070 R=1.5 D		8,16									
M Erection													Total Kg:		231,98							
SZ2	PIPING BOM						65019 - 0				A	AREA A	1 / 1		TOTAL Kg:		231,98					

65Y43	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0		
	Line 65019 - 0	Fluid	System		
	Dang. fluid type	Coating	De pres		
	Area AREA A	Sketch Sht 1 / 1	Isometric code		
	Zones		Op tem		
			Page 1		

DESMET - Ballestra							SKETCHES MATERIAL LIST							PROJ:		1E35		REV:		0		16/11/2010	
PUMA5				16/11/2010 10.00.25										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ							Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch								
600	200	0	mm	3,0		mm	,00	2,00	m	124	Pipe SB-ATI-PT002/0 PL Welded Fe 360 B - UNI 7070		31,97										
M Erection													Total Kg:		31,97								
SZ2	PIPING BOM						65020 - 0				A	AREA A		1 / 1		TOTAL Kg:		31,97					

65Y1	Plant	SZ2 PIPING BOM	Piping Class	124	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	65020 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0	16/11/2010				
PUMA5			16/11/2010 10.00.25										DOC:		1E35.65.1102									
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm			
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch									
600	200	0	mm	3,0		mm	,00	1,00	m	124	Pipe SB-ATI-PT002/0 PL Welded Fe 360 B - UNI 7070		15,99											
1213	200	0	mm	3,0		mm	,00	1,00	NR	124	90° Miter SB-ATI-PC003/0 BE Welded Fe 360 B - UNI 7070 R=1.5 D		7,50											
M Erection													Total Kg:		23,49									
SZ2	PIPING BOM						65021 - 0			A	AREA A		1 / 1		TOTAL Kg:		23,49							

65Y2	Plant	SZ2 PIPING BOM	Piping Class	124	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	65021 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra								SKETCHES MATERIAL LIST					PROJ:	1E35	REV:	0	16/11/2010
PUMA5				16/11/2010 10.00.25									DOC:	1E35.65.1102			
DESMET - Ballestra								SABIZ					Size: mm	Thk: mm	Temp: °C	Pres: Bar(g)	Corr: mm
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch		
566	100	0	mm	3,18		mm	,00	2,00	m	124	Pipe ASME B36.10 PL E.R.W. API 5L Gr.B		17,43				
59	100	0	mm	3,18		mm	,00	1,00	NR	124	90° Elbow Long Radius ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB		2,07				
M Erection													Total Kg:	19,49			
SZ2	PIPING BOM						65022 - 0		A	AREA A			1 / 1	TOTAL Kg:	19,49		

65Y3	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
	Line 65022 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Isometric code
	Zones		Op tem
			Page 1

DESMET - Ballestra								SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0	16/11/2010		
PUMA5				16/11/2010 10.00.26										DOC:		1E35.65.1102							
DESMET - Ballestra								SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch								
568	150	0	mm	3,96		mm	,00	8,00	m	124	Pipe ASME B36.10 PL E.R.W. API 5L Gr.B		128,39										
27	150	0	mm	3,96		mm	,00	2,00	NR	124	45° Elbow Long Radius ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB		5,70										
61	150	0	mm	3,96		mm	,00	1,00	NR	124	90° Elbow Long Radius ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB		5,66										
M Erection													Total Kg:		139,75								
SZ2	PIPING BOM						65023 - 0				A	AREA A		1 / 1		TOTAL Kg:		139,75					

65Y4	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
	Line 65023 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Isometric code
	Zones		Op tem
			Page 1

DESMET - Ballestra								SKETCHES MATERIAL LIST					PROJ:	1E35	REV:	0	16/11/2010
PUMA5				16/11/2010 10.00.26									DOC:	1E35.65.1102			
DESMET - Ballestra								SABIZ					Size: mm	Thk: mm	Temp: °C	Pres: Bar(g)	Corr: mm
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch		
568	150	0	mm	3,96		mm	,00	8,00	m	124	Pipe ASME B36.10 PL E.R.W. API 5L Gr.B		128,39				
61	150	0	mm	3,96		mm	,00	1,00	NR	124	90° Elbow Long Radius ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB		5,66				
M Erection													Total Kg:	134,05			
SZ2	PIPING BOM					65024 - 0					A	AREA A	1 / 1		TOTAL Kg:	134,05	

65Y5	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0		
	Line 65024 - 0	Fluid	System		
	Dang. fluid type	Coating	De pres		
	Area AREA A	Sketch Sht 1 / 1	Op tem		
	Zones		Isometric code		

DESMET - Ballestra								SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0	16/11/2010		
PUMA5				16/11/2010 10.00.26										DOC:		1E35.65.1102							
DESMET - Ballestra								SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch		
568	150	0	mm	3,96		mm	,00	1,50	m	124	Pipe ASME B36.10 PL E.R.W. API 5L Gr.B							24,07					
27	150	0	mm	3,96		mm	,00	2,00	NR	124	45° Elbow Long Radius ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB							5,70					
61	150	0	mm	3,96		mm	,00	1,00	NR	124	90° Elbow Long Radius ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB							5,66					
M Erection																Total Kg:		35,44					
SZ2	PIPING BOM						65025 - 0				A	AREA A				1 / 1		TOTAL Kg:		35,44			

65Y6	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
	Line 65025 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Isometric code
	Zones		Op tem
			Page 1

DESMET - Ballestra								SKETCHES MATERIAL LIST					PROJ:	1E35	REV:	0	16/11/2010
PUMA5				16/11/2010 10.00.26									DOC:	1E35.65.1102			
DESMET - Ballestra								SABIZ					Size: mm	Thk: mm	Temp: °C	Pres: Bar(g)	Corr: mm
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch		
568	150	0	mm	3,96		mm	,00	2,00	m	124	Pipe ASME B36.10 PL E.R.W. API 5L Gr.B		32,10				
61	150	0	mm	3,96		mm	,00	1,00	NR	124	90° Elbow Long Radius ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB		5,66				
M Erection													Total Kg:		37,76		
SZ2	PIPING BOM						65026 - 0				A	AREA A	1 / 1		TOTAL Kg:		37,76

65Y7	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
	Line 65026 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Op tem
	Zones		Isometric code
			Page 1

DESMET - Ballestra								SKETCHES MATERIAL LIST						PROJ:		1E35		REV:	0	16/11/2010			
PUMA5				16/11/2010 10.00.26										DOC:		1E35.65.1102							
DESMET - Ballestra								SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch								
545	100	0	mm	3,18		mm	,00	1,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		8,71										
219	100	0	mm			mm	,00	2,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH) Forged Fe 360 B - UNI 7070	1615	3,80										
1615	M10	0	mm			mm	35,00	12,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6 UNI 3740 + 4A UNI 3740		0,48										
303	100	0	mm			mm	,00	3,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C												
M Erection													Total Kg:		12,99								
SZ2	PIPING BOM				65094 - 0				A		AREA A		1 / 1		TOTAL Kg:		12,99						

KV_65.4	Plant	SZ2 PIPING BOM	Piping Class	129	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	65094 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra							SKETCHES MATERIAL LIST							PROJ:		1E35		REV:		0		16/11/2010	
PUMA5			16/11/2010 10.00.26											DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ							Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch		
545	100	0	mm	3,18		mm	,00	5,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B							43,57					
M Erection																Total Kg:		43,57					
SZ2	PIPING BOM						65095 - 0				A	AREA A				1 / 1		TOTAL Kg:		43,57			

65Y51	Plant SZ2 PIPING BOM Line 65095 - 0 Dang. fluid type Area AREA A Zones	Piping Class 129 Fluid Coating Sketch Sht 1 / 1	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0 System De pres Isometric code	Op tem	Page 1
65Y54					

DESMET - Ballestra								SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5				16/11/2010 10.00.27										DOC:		1E35.65.1102							
DESMET - Ballestra								SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch								
545	100	0	mm	3,18		mm	,00	1,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		8,71										
219	100	0	mm			mm	,00	2,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH)	1615	3,80										
											Forged Fe 360 B - UNI 7070												
1615	M10	0	mm			mm	35,00	12,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6		0,48										
											UNI 3740 + 4A UNI 3740												
303	100	0	mm			mm	,00	3,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C												
M Erection												Total Kg:		12,99									
SZ2	PIPING BOM				65096 - 0				A		AREA A		1 / 1		TOTAL Kg:		12,99						

KV_65.5	Plant	SZ2 PIPING BOM	Piping Class	129	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	65096 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	
	Zones					

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5			16/11/2010 10.00.27										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch	
545	100	0	mm	3,18		mm	,00	5,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B							43,57				
M Erection																Total Kg:		43,57				
SZ2	PIPING BOM			65097 - 0				A		AREA A		1 / 1		TOTAL Kg:		43,57						

65Y52	Plant SZ2 PIPING BOM Line 65097 - 0 Dang. fluid type Area AREA A Zones	Piping Class 129 Fluid Coating Sketch Sht 1 / 1	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0 System De pres Isometric code	Op tem	Page 1
65Y53					

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0	16/11/2010		
PUMA5			16/11/2010 10.00.27										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch							
546	125	0	mm	3,96		mm	,00	0,50	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		6,71									
220	125	0	mm			mm	,00	1,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH)	1616	2,93									
											Forged Fe 360 B - UNI 7070											
645	150	125	mm	3,96	3,96	mm	,00	1,00	NR	129	Reducer Concentric ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB		2,18									
1616	M10	0	mm			mm	40,00	16,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6		0,80									
											UNI 3740 + 4A UNI 3740											
304	125	0	mm			mm	,00	2,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C											
M Erection												Total Kg:		12,61								
SZ2	PIPING BOM						65200 - 0				A	AREA A		1 / 1		TOTAL Kg:		12,61				

KV_65.6A	Plant SZ2 PIPING BOM	Piping Class 129	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
	Line 65200 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Isometric code
	Zones		Op tem
			Page 1

DESMET - Ballestra							SKETCHES MATERIAL LIST							PROJ:		1E35		REV:		0		16/11/2010	
PUMA5				16/11/2010 10.00.27										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ							Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch								
547	150	0	mm	3,96		mm	,00	5,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		80,24										
M Erection													Total Kg:		80,24								
SZ2	PIPING BOM			65201 - 0			A		AREA A		1 / 1		TOTAL Kg:		80,24								

65Y33	Plant SZ2 PIPING BOM	Piping Class 129	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
65Y55	Line 65201 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Op tem
	Zones		Isometric code
			Page 1

DESMET - Ballestra								SKETCHES MATERIAL LIST					PROJ:	1E35		REV:	0	16/11/2010				
PUMA5				16/11/2010 10.00.28									DOC:	1E35.65.1102								
DESMET - Ballestra								SABIZ					Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch							
546	125	0	mm	3,96		mm	,00	0,50	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		6,71									
220	125	0	mm			mm	,00	1,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH)	1616	2,93									
											Forged Fe 360 B - UNI 7070											
645	150	125	mm	3,96	3,96	mm	,00	1,00	NR	129	Reducer Concentric ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB		2,18									
1616	M10	0	mm			mm	40,00	16,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6		0,80									
											UNI 3740 + 4A UNI 3740											
304	125	0	mm			mm	,00	2,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C											
M Erection													Total Kg:		12,61							
SZ2	PIPING BOM						65202 - 0			A	AREA A		1 / 1		TOTAL Kg:		12,61					

KV_65.6B	Plant SZ2 PIPING BOM	Piping Class 129	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0		
	Line 65202 - 0	Fluid	System		
	Dang. fluid type	Coating	De pres		Op tem
	Area AREA A	Sketch Sht 1 / 1	Isometric code		Page 1
	Zones				

DESMET - Ballestra							SKETCHES MATERIAL LIST							PROJ:		1E35		REV:		0		16/11/2010	
PUMA5			16/11/2010 10.00.28											DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ							Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch		
547	150	0	mm	3,96		mm	,00	5,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B							80,24					
M Erection																Total Kg:		80,24					
SZ2	PIPING BOM			65203 - 0				A		AREA A		1 / 1		TOTAL Kg:		80,24							

65Y35	Plant SZ2 PIPING BOM	Piping Class 129	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
65Y57	Line 65203 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Op tem
	Zones		Isometric code
			Page 1

DESMET - Ballestra							SKETCHES MATERIAL LIST							PROJ:	1E35		REV:	0	16/11/2010	
PUMA5			16/11/2010 10.00.28											DOC:	1E35.65.1102					
DESMET - Ballestra							SABIZ					Size: mm Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm		
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch					
546	125	0	mm	3,96		mm	,00	0,50	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		6,71							
220	125	0	mm			mm	,00	1,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH) Forged Fe 360 B - UNI 7070	1616	2,93							
645	150	125	mm	3,96	3,96	mm	,00	1,00	NR	129	Reducer Concentric ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB		2,18							
1616	M10	0	mm			mm	40,00	16,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6 UNI 3740 + 4A UNI 3740		0,80							
304	125	0	mm			mm	,00	2,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C									
M Erection													Total Kg:		12,61					
SZ2	PIPING BOM						65204 - 0				A	AREA A	1 / 1		TOTAL Kg:		12,61			

KV_65.6C	Plant SZ2 PIPING BOM	Piping Class 129	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0		
	Line 65204 - 0	Fluid	System		
	Dang. fluid type	Coating	De pres		Op tem
	Area AREA A	Sketch Sht 1 / 1	Isometric code		Page 1
	Zones				

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010		
PUMA5			16/11/2010 10.00.28										DOC:		1E35.65.1102								
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm		
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch		
547	150	0	mm	3,96		mm	,00	5,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B							80,24					
M Erection																Total Kg:		80,24					
SZ2	PIPING BOM						65205 - 0				A	AREA A				1 / 1		TOTAL Kg:		80,24			

65Y37	Plant SZ2 PIPING BOM Line 65205 - 0 Dang. fluid type Area AREA A Zones	Piping Class 129 Fluid Coating Sketch Sht 1 / 1	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0 System De pres Isometric code	Op tem	Page 1
65Y58					

DESMET - Ballestra								SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5				16/11/2010 10.00.28										DOC:		1E35.65.1102							
DESMET - Ballestra								SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch								
546	125	0	mm	3,96		mm	,00	0,50	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B		6,71										
220	125	0	mm			mm	,00	1,00	NR	129	Flange Slip-On SB-ATI-PF002/0 * SB-ATI-PF002(125÷250AARH)	1616	2,93										
											Forged Fe 360 B - UNI 7070												
645	150	125	mm	3,96	3,96	mm	,00	1,00	NR	129	Reducer Concentric ASME B16.9 BE E.R.W. ASTM A 234 Gr. WPB		2,18										
1616	M10	0	mm			mm	40,00	16,00	NR	129	Machine Bolt + 1 Nut SB-ATI-PV008A/0 - UNI 5727 + UNI 5592 4.6		0,80										
											UNI 3740 + 4A UNI 3740												
304	125	0	mm			mm	,00	2,00	NR	129	Gasket SB-ATI-PV009/1 * SB-ATI-PF002(125÷250AARH) _ B18C												
M Erection													Total Kg:		12,61								
SZ2	PIPING BOM						65206 - 0		A	AREA A		1 / 1		TOTAL Kg:		12,61							

KV_65.6D	Plant SZ2 PIPING BOM	Piping Class 129	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0		
	Line 65206 - 0	Fluid	System		
	Dang. fluid type	Coating	De pres		
	Area AREA A	Sketch Sht 1 / 1	Isometric code		
	Zones		Op tem		
Page 1					

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5			16/11/2010 10.00.29										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch	
547	150	0	mm	3,96		mm	,00	5,00	m	129	Pipe ASME B36.10 BE E.R.W. API 5L Gr.B							80,24				
M Erection																Total Kg:		80,24				
SZ2	PIPING BOM			65207 - 0				A		AREA A		1 / 1		TOTAL Kg:		80,24						

65Y38	Plant SZ2 PIPING BOM Line 65207 - 0 Dang. fluid type Area AREA A Zones	Piping Class 129 Fluid Coating Sketch Sht 1 / 1	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0 System De pres Isometric code	Op tem	Page 1
65Y59					

DESMET - Ballestra								SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5				16/11/2010 10.00.29										DOC:		1E35.65.1102							
DESMET - Ballestra								SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)	As.bly	Branch			
574	15	0	mm	2,77		mm	,00	0,20	m	124	Pipe ASME B36.10 PL sch.40 Seamless API 5L Gr.B							0,25					
M Erection																	Total Kg:		0,25				
SZ2	PIPING BOM				VEST. 62V1 - 0				A		AREA A				1 / 1		TOTAL Kg:		0,25				

LSL_62.1	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
LSH_62.1	Line VEST. 62V1 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Op tem
	Zones		Isometric code
			Page 1

DESMET - Ballestra								SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5				16/11/2010 10.00.29										DOC:		1E35.65.1102							
DESMET - Ballestra								SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch		
574	15	0	mm	2,77		mm	,00	0,20	m	124	Pipe ASME B36.10 PL sch.40 Seamless API 5L Gr.B							0,25					
M Erection																Total Kg:		0,25					
SZ2	PIPING BOM				VEST. 62V2 - 0				A		AREA A		1 / 1		TOTAL Kg:		0,25						

LSL_62.2	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
LSH_62.2	Line VEST. 62V2 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Op tem
	Zones		Isometric code
			Page 1

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5			16/11/2010 10.00.29										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch	
574	15	0	mm	2,77		mm	,00	0,20	m	124	Pipe ASME B36.10 PL sch.40 Seamless API 5L Gr.B							0,25				
M Erection															Total Kg:		0,25					
SZ2	PIPING BOM			VEST. 62V3 - 0				A		AREA A		1 / 1		TOTAL Kg:		0,25						

LSL_62.3	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
LSH_62.3	Line VEST. 62V3 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Op tem
	Zones		Isometric code
			Page 1

DESMET - Ballestra								SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5				16/11/2010 10.00.30										DOC:		1E35.65.1102							
DESMET - Ballestra								SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch		
574	15	0	mm	2,77		mm	,00	0,20	m	124	Pipe ASME B36.10 PL sch.40 Seamless API 5L Gr.B							0,25					
M Erection																Total Kg:		0,25					
SZ2	PIPING BOM				VEST. 62V4 - 0				A		AREA A		1 / 1		TOTAL Kg:		0,25						

LSL_62.4	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
LSH_62.4	Line VEST. 62V4 - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Op tem
	Zones		Isometric code
			Page 1

DESMET - Ballestra							SKETCHES MATERIAL LIST							PROJ:		1E35		REV:		0		16/11/2010	
PUMA5				16/11/2010 10.00.30										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ							Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch		
574	15	0	mm	2,77		mm	,00	0,20	m	124	Pipe ASME B36.10 PL sch.40 Seamless API 5L Gr.B							0,25					
M Erection															Total Kg:		0,25						
SZ2	PIPING BOM			VEST. 62V5 - 0					A	AREA A		1 / 1		TOTAL Kg:		0,25							

LSL_62.5 LSH_62.5	Plant	SZ2 PIPING BOM	Piping Class	124	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	VEST. 62V5 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra							SKETCHES MATERIAL LIST					PROJ:		1E35		REV:		0		16/11/2010	
PUMA5			16/11/2010 10.00.30									DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ					Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component					Gen. Bolt	Weight (Kg)		As.bly	Branch	
574	15	0	mm	2,77		mm	,00	0,20	m	124	Pipe ASME B36.10 PL sch.40 Seamless API 5L Gr.B						0,25				
M Erection															Total Kg:		0,25				
SZ2	PIPING BOM			VEST. 62V6 - 0				A		AREA A		1 / 1		TOTAL Kg:		0,25					

LSL_62.6	Plant	SZ2 PIPING BOM	Piping Class	124	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	VEST. 62V6 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra								SKETCHES MATERIAL LIST								PROJ:		1E35		REV:		0		16/11/2010		
PUMA5				16/11/2010 10.00.30												DOC:		1E35.65.1102								
DESMET - Ballestra								SABIZ								Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm		
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component										Gen. Bolt	Weight (Kg)		As.bly	Branch	
574	15	0	mm	2,77		mm	,00	0,20	m	124	Pipe ASME B36.10 PL sch.40 Seamless API 5L Gr.B											0,25				
M Erection																	Total Kg:		0,25							
SZ2	PIPING BOM				VEST. 62V6A - 0				A		AREA A				1 / 1				TOTAL Kg:		0,25					

LSL_62.6A	Plant	SZ2 PIPING BOM	Piping Class	124	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	VEST. 62V6A - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra								SKETCHES MATERIAL LIST										PROJ:		1E35		REV:		0		16/11/2010	
PUMA5				16/11/2010 10.00.30														DOC:		1E35.65.1102							
DESMET - Ballestra								SABIZ										Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch												
553	15	0	mm	2,77		mm	,00	0,30	m	126	Pipe ASME B36.10 PL Seamless ASTM A 106 Gr. B		0,38														
1128	15	0	mm			mm	,00	1,00	NR	126	Valve Ball Full Port SB-ATI-VS070/0 LUG 600 LB LF (125÷250 AARH) Forged CARBON STEEL S 148	1646	3,00														
1177	15	0	mm			mm	,00	1,00	NR	126	Valve Check SB-ATI-VR007/0 FLG 600 LB LF (125÷250 AARH) Forged ASTM A 105 R 59	1574	3,50														
134	15	0	mm			mm	,00	4,00	NR	126	Flange Slip-On ASME B16.5 600 LB LM (125÷250 AARH) Forged ASTM A 105	1574	3,20														
1574	15	0	mm			mm	70,00	8,00	NR	126	Stud Bolt + 2 Nuts SB-ATI-PV008B/0 ASME B18.2.1 UNC/2.2 Tab.9 ASTM A 193 B7 / A 194 Gr.2H		0,88														
241	15	0	mm			mm	,00	4,00	NR	126	Gasket SB-ATI-PV009/1 600 LB _ B4C																
1646	15	0	mm			mm	45,00	8,00	NR	126	Screws for valves ASME B 18.2.1/UNC ASTM A 193 B7		0,72														
M Erection												Total Kg:		11,68													
SZ2	PIPING BOM				VEST. 63AB1 - 0				A	AREA A		1 / 1		TOTAL Kg:		11,68											

PISH_63.3	Plant	SZ2 PIPING BOM		Piping Class	126		Welding specification		SB-ATI-SP006/0 SB-ATI-SP007/0	
	Line	VEST. 63AB1 - 0		Fluid			System			
	Dang. fluid type			Coating			De pres		Op tem	
	Area	AREA A		Sketch Sht	1 / 1		Isometric code			
	Zones									Page 1

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5			16/11/2010 10.00.31										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch	
574	15	0	mm	2,77		mm	,00	0,20	m	124	Pipe ASME B36.10 PL sch.40 Seamless API 5L Gr.B							0,25				
M Erection												Total Kg:		0,25								
SZ2	PIPING BOM			VEST. 64V6 - 0				A		AREA A		1 / 1		TOTAL Kg:		0,25						

LSL_64.4
LSL_64.7
64Y35
64Y36

Plant SZ2 PIPING BOM

Line VEST. 64V6 - 0
Dang. fluid type
Area AREA A
Zones

Piping Class 124

Fluid
Coating
Sketch Sht 1 / 1

Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0

System
De pres
Isometric code

Op tem

DESMET - Ballestra								SKETCHES MATERIAL LIST					PROJ:		1E35		REV:		0		16/11/2010	
PUMA5				16/11/2010 10.00.31									DOC:		1E35.65.1102							
DESMET - Ballestra								SABIZ					Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component					Gen. Bolt	Weight (Kg)		As.bly	Branch		
574	15	0	mm	2,77		mm	,00	0,20	m	124	Pipe ASME B36.10 PL sch.40 Seamless API 5L Gr.B						0,25					
M Erection															Total Kg:		0,25					
SZ2	PIPING BOM			VEST. 65V1 - 0				A		AREA A		1 / 1		TOTAL Kg:		0,25						

LSL_65.1	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
LSH_65.1	Line VEST. 65V1 - 0	Fluid	System
65Y48	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Op tem
	Zones		Isometric code
			Page 1

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5			16/11/2010 10.00.31										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch	
574	15	0	mm	2,77		mm	,00	0,20	m	124	Pipe ASME B36.10 PL sch.40 Seamless API 5L Gr.B							0,25				
M Erection															Total Kg:		0,25					
SZ2	PIPING BOM			VEST. 65V2 - 0				A		AREA A		1 / 1		TOTAL Kg:		0,25						

LSL_65.2	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
LSH_65.2	Line VEST. 65V2 - 0	Fluid	System
65Y49	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Op tem
	Zones		Isometric code
			Page 1

DESMET - Ballestra							SKETCHES MATERIAL LIST							PROJ:		1E35		REV:		0		16/11/2010	
PUMA5				16/11/2010 10.00.31										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ							Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component	Gen. Bolt	Weight (Kg)	As.bly	Branch								
574	15	0	mm	2,77		mm	,00	0,20	m	124	Pipe ASME B36.10 PL sch.40 Seamless API 5L Gr.B		0,25										
M Erection													Total Kg:		0,25								
SZ2	PIPING BOM			VEST. 65V3 - 0				A		AREA A		1 / 1		TOTAL Kg:		0,25							

LSL_65.3 65Y50	Plant	SZ2 PIPING BOM	Piping Class	124	Welding specification	SB-ATI-SP006/0 SB-ATI-SP007/0
	Line	VEST. 65V3 - 0	Fluid		System	
	Dang. fluid type		Coating		De pres	Op tem
	Area	AREA A	Sketch Sht	1 / 1	Isometric code	Page 1
	Zones					

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5			16/11/2010 10.00.32										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch	
574	15	0	mm	2,77		mm	,00	0,20	m	124	Pipe ASME B36.10 PL sch.40 Seamless API 5L Gr.B							0,25				
M Erection															Total Kg:		0,25					
SZ2	PIPING BOM			VEST. 65V6A - 0				A		AREA A		1 / 1		TOTAL Kg:		0,25						

LSH_65.6A	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
LSL_65.6A	Line VEST. 65V6A - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Op tem
	Zones		Isometric code
			Page 1

DESMET - Ballestra								SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5				16/11/2010 10.00.32										DOC:		1E35.65.1102							
DESMET - Ballestra								SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)	As.bly	Branch			
574	15	0	mm	2,77		mm	,00	0,20	m	124	Pipe ASME B36.10 PL sch.40 Seamless API 5L Gr.B							0,25					
M Erection																	Total Kg:		0,25				
SZ2	PIPING BOM			VEST. 65V6B - 0				A		AREA A		1 / 1				TOTAL Kg:		0,25					

LSH_65.6B	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
LSL_65.6B	Line VEST. 65V6B - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Op tem
	Zones		Isometric code
			Page 1

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5			16/11/2010 10.00.32										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch	
574	15	0	mm	2,77		mm	,00	0,20	m	124	Pipe ASME B36.10 PL sch.40 Seamless API 5L Gr.B							0,25				
M Erection															Total Kg:		0,25					
SZ2	PIPING BOM			VEST. 65V6C - 0				A		AREA A		1 / 1		TOTAL Kg:		0,25						

LSH_65.6C	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
LSL_65.6C	Line VEST. 65V6C - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Op tem
	Zones		Isometric code
			Page 1

DESMET - Ballestra							SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5			16/11/2010 10.00.32										DOC:		1E35.65.1102							
DESMET - Ballestra							SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)		As.bly	Branch	
574	15	0	mm	2,77		mm	,00	0,20	m	124	Pipe ASME B36.10 PL sch.40 Seamless API 5L Gr.B							0,25				
M Erection															Total Kg:		0,25					
SZ2	PIPING BOM			VEST. 65V6D - 0				A		AREA A		1 / 1		TOTAL Kg:		0,25						

LSH_65.6D	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
LSL_65.6D	Line VEST. 65V6D - 0	Fluid	System
	Dang. fluid type	Coating	De pres
	Area AREA A	Sketch Sht 1 / 1	Op tem
	Zones		Isometric code
			Page 1

DESMET - Ballestra								SKETCHES MATERIAL LIST						PROJ:		1E35		REV:		0		16/11/2010	
PUMA5				16/11/2010 10.00.32										DOC:		1E35.65.1102							
DESMET - Ballestra								SABIZ						Size: mm		Thk: mm		Temp: °C		Pres: Bar(g)		Corr: mm	
Mark	S1	S2		T1	T2		Len mm	Qty	Um	Pip. class	Component						Gen. Bolt	Weight (Kg)	As.bly	Branch			
574	15	0	mm	2,77		mm	,00	0,20	m	124	Pipe ASME B36.10 PL sch.40 Seamless API 5L Gr.B							0,25					
M Erection																	Total Kg:		0,25				
SZ2	PIPING BOM			VEST. 65V7 - 0				A		AREA A		1 / 1				TOTAL Kg:		0,25					

LSH_65.7	Plant SZ2 PIPING BOM	Piping Class 124	Welding specification SB-ATI-SP006/0 SB-ATI-SP007/0
LSL_65.7	Line VEST. 65V7 - 0	Fluid	System
65Y47	Dang. fluid type	Coating	De pres
65Y10	Area AREA A	Sketch Sht 1 / 1	Isometric code
	Zones		Op tem
			Page 1