

#### "leading stockiest... reliable supplier"







#### DAMMAM

Wasel Bldg. No. 7148 Dammam - 32242-4576 Kingdom of Saudi Arabia

**T**: +966 13 826 0994 **F**: +966 13 827 0126 **E**: sales@alkafaa.com

#### RIYADH

Wasel Bldg. No. 4600 Riyadh – 14273 - 7868 Kingdom of Saudi Arabia

**T**: +966 11 471 3793 **F**: +966 11 270 2143 **E**: riyadh@alkafaa.com

#### **JEDDAH**

Wasel Bldg. No. 2979 Jeddah – 23334 - 8401 Kingdom of Saudi Arabia

T: +966 12 283 3101 F: +966 12 286 4523 E: jeddah@alkafaa.com Unified: 920002677 | info@alkafaa.com

# **Executive Summary**



**ALKAFAA** was established in **1982**. Nowadays, **ALKAFAA** is considered to be one of the leading suppliers and stockiest in Saudi Arabia.

Specialized in Carbon and Stainless Steel Pipes, Fittings, Sheets and Valves. ALKAFAA is an Approved Vendor for most of the leading companies and contractors (i.e. SAUDI ARAMCO, SABIC, SEC, MARAFIQ, SATORP, MA'ADEN, SINOPEC, SAIPEM, SAMSUNG, PETROFAC, TECHNICAS REUNIDAS, HYUNDAI, DAEWOO and many more).

Oil & Gas, Petrochemicals, Dairy Industry, Desalination Plants, Industrial Factories, Commercial and Infrastructure Construction Projects all are **industries and applications** of our range of materials.

**Backed** with **3 decades** of experience, **ALKAFAA** is known to provide quality products and services to national and international clients. The **network of branches and warehouses** of **ALKAFAA** enabled wide coverage, reaching remote projects and responding efficiently to client's demand.







# **Quality Policy**



#### **Our Quality Policy is to:**

- Provide quality products and services; while focusing on Customer Satisfaction a key indicator to the overall operational success.
- Embedding quality assurance in material's life cycle and transactions, starting from the phase of planning & preparation for procurement; throughout inspection and storage till the phase of dispatch and delivery.
- Committed to continuously reduce environmental impact, improving the way of doing things, while delivering best products that fits customer's requirement also aspiring to exceed client's expectation.
- Enhancing relations with internal and external customers by reinforcing business ethics, being genuine, transparent, efficient and professional.









Product	Material	Construction		Standard					
			API 5L	Specification for Line pipe					
			ASTM A106	Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service1					
			ASTM A53	Standard Specification for Pipe, Steel, Black and Hot- Dipped, Zinc-Coated, Welded and Seamless					
DIDEC	CARBON STEEL	SEAMLESS & WELDED	ASTM A333	Standard Specification for Seamless and Welded Steel Pipe for Low-Temperature Service1					
PIPES			01-SAMSS-035	API 5L Line pipe					
			01-SAMSS-038	Small quantity purchase of pipes from stockiest and approved mills.					
			01-SAMSS-043	CS pipes for On-Plot piping's					
	STAINLESS	SEAMLESS &	ASTM A312	Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes					
	STEEL	WELDED	01-SAMSS-046	Stainless steel pipes					



Product	Material	Construction		Standard
			ASTM A105	Standard Specification for Carbon Steel Forgings for Piping Applications
FITTINGS		Forged	ASTM A350	Standard Specification for Carbon and Low-Alloy Steel Forgings, Requiring Notch Toughness Testing for Piping Components
	CARBON		ASTM A234	Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service
<b>6392</b>	STEEL	Butt weld-	ASTM A420	Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low-Temperature Service1
		Seamless & Welded	ASTM A860	Standard Specification for Wrought High-Strength Low-Alloy Steel Butt-Welding Fittings
			MSS SP 75	Specification of high test, wrought, butt weld fittings.
			02-SAMSS-005	Butt welding pipe Fittings.
	STAINLESS	Forged	ASTM A182	Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High- Temperature Service
	STEEL	Butt weld- Seamless & Welded	ASTM A403	Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings



Product	Material	Construction		Standard
FLANGES	CARRON STEEL		ASTM A105	Standard Specification for Carbon Steel Forgings for Piping Applications
	CARBON STEEL		ASTM A350	Standard Specification for Carbon and Low-Alloy Steel Forgings, Requiring Notch Toughness Testing for Piping Components
	STAINLESS STEEL	Forged	ASTM A182	Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service
			02-SAMSS-011	Forged steel and alloy flanges.
SHEETS & PLATES	STAINLESS STEEL		ASTM A240	Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
	ALUMINUM PLAIN & CHECKRED		Alloy 1050 & 3003	Aluminum Alloy A1050 & A3003 H14 & H24. Aluminum Checkered



Product	Material	Construction		Standard
			ASTM A105	Standard Specification for Carbon Steel Forgings for Piping Applications
	CARBON	Forged	ASTM A350	Standard Specification for Carbon and Low-Alloy Steel Forgings, Requiring Notch Toughness Testing for Piping Components
VALVES	STEEL		ASTM A216	Standard Specification for Steel Castings, Carbon, Suitable for Fusion Welding, for High-Temperature Service
		Cast	ASTM A352	Standard Specification for Steel Castings, Ferritic and Martensitic, for Pressure-Containing Parts, Suitable for Low-Temperature Service
	STAINLESS	Forged	ASTM A182	Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service
	STEEL	Cast	ASTM A351	Standard Specification for Castings, Austenitic, for Pressure- Containing Parts
BARS	STAINLESS STEEL		ASTM A276	Standard Specification for Stainless steel Bars & Shapes.
TUBES	STAINLESS STEEL		ASTM A269	Standard Specification for seamless and welded Austenitic Stainless Steel Tubing for General Service

#### **Connected Worldwide**

Stocking material from all over the world





Category	COUNTRY
Carbon Steel (CS), Welded Pipes,	SAUDI ARABIA
Carbon Steel (CS) & Stainless Steel (SS) Pipes , Fittings & Flanges	GERMANY
Carbon Steel (CS) & Stainless Steel (SS) Pipes , Fittings & Flanges	FRANCE
Carbon Steel (CS) & Stainless Steel (SS) Pipes , Fittings & Flanges	ITALY
Carbon Steel (CS) & Stainless Steel (SS) Pipes , Fittings & Flanges	SPAIN
Carbon Steel (CS) & Stainless Steel (SS) Pipes , Fittings ,Flanges, SS Bars, SS Sheets/Plates Aluminum Plain & Checkered Sheets/Plates	CHINA
Carbon Steel (CS) , Welded Pipes ,	UKRAINE
Carbon Steel (CS) , Welded Pipes ,	OMAN
Aluminum Sheets/Plates	BAHRAIN
Carbon Steel (CS) & Stainless Steel (SS) Pipes , Fittings & Flanges	AUSTRIA
Carbon Steel (CS) & Stainless Steel (SS) Fittings , Flanges & Bars	INDIA
Carbon Steel (CS) & Stainless Steel (SS) Pipes , Fittings & Flanges	KOREA
Carbon Steel (CS), Pipes	BRAZIL,
Carbon Steel (CS) & Stainless Steel (SS) Pipes , Fittings & Flanges	THAILAND

#### Our products are complying with the latest edition of the references listed below:

- SAUDI ARAMCO MATERIAL SYSTEM SPECIFICATIONS (SAMSS)
- AMERICAN PETROLEUM INSTITUTE (API)
- AMERICAN SOCIETY FOR TESTING AND MATERIAL (ASTM)
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)
- SAUDI ARAMCO INSPECTION REQUIREMENTS (SAIR)

# **Certificates & Approvals**

**Overview Snapshots** 



















### **Conversion Table**

**Metric System** 



	Wall = Wall thickness in millimeters  Wt = Weight in kilograms per meter															Figu	ires ha	sed or	nitic '	Steel		Shipping															
Nom Pipe inch		O.D. mm	Scher Wall	dule 10 Wt	Sche Wall	dule 20 Wt	Sche Wall	dule 30		ndard		dule 40 Wt	Schedule 60 Wall Wt		Schedule XS Wall Wt		Schedule 80 Wall Wt			Schedule 100 Wall Wt		ule 120 Wt			Sched Wall	ule 160 Wt	Schedule XXS Wall Wt		Sched Wall	dule 5S		ule 10S Wt				ule 80S Wt	Vol/M m3
1/8	5	10.3							1.73	0.37	1.73	0.37			2.41	0.47	2.41	0.47													1.24	0.28	1.73	0.36	2.41	0.48	0.0001
1/4	8	13.7							2.24	0.63	2.24	0.63			3.02	0.80	3.02	0.80													1.65	0.51	2.24	0.64	3.02	0.82	0.0002
3/8	10	17.1							2.31	0.84	2.31	0.84			3.20	1.10	3.20	1.10													1.65	0.64	2.31	0.86	3.20	1.12	0.0003
1/2	15	21.3							2.77	1.27	2.77	1.27			3.73	1.62	3.73	1.62							4.78	1.95	7.47	2.55	1.65	0.82	2.11	1.01	2.77	1.30	3.73	1.65	0.0004
3/4	20	26.7							2.87	1.69	2.87	1.69			3.91	2.20	3.91	2.20							5.56	2.90	7.82	3.64	1.65	1.04	2.11	1.31	2.87	1.71	3.91	2.24	0.0007
1	25	33.4							3.38	2.50	3.38	2.50			4.55	3.24	4.55	3.24							6.35	4.24	9.09	5.45	1.65	1.33	2.77	2.13	3.38	2.55	4.55	3.29	0.0011
11/4	32	42.2							3.56	3.39	3.56	3.39			4.85	4.47	4.85	4.47							6.35	5.61	9.70	7.77	1.65	1.68	2.77	2.76	3.56	3.46	4.85	4.56	0.0018
11/2	40	48.3							3.68	4.05	3.68	4.05			5.08	5.41	5.08	5.41							7.14	7.25	10.15	9.56	1.65	1.95	2.77	3.17	3.68	4.13	5.08	5.51	0.0023
2	50	60.3							3.91	5.44	3.91	5.44			5.54	7.48	5.54	7.48							8.74	11.11	11.07	13.44	1.65	2.44	2.77	4.01	3.91	5.54	5.54	7.63	0.0036
2 1/2	65	73.0							5.16	8.63	5.16	8.63			7.01	11.41	7.01	11.41							9.53	14.92	14.02	20.39	2.11	3.77	3.05	5.36	5.16	8.81	7.01	11.64	0.0053
3	80	88.9							5.49	11.29	5.49	11.29			7.62	15.27	7.62	15.27							11.13	21.35	15.24	27.68	2.11	4.60	3.05	6.59	5.49	11.52	7.62	15.59	0.0079
3 1/2	90	101.6							5.74	13.57	5.74	13.57			8.08	18.63	8.08	18.63											2.11	5.29	3.05	7.55	5.74	13.84	8.08	19.01	0.0103
4	100	114.3							6.02	16.07	6.02	16.07			8.56	22.32	8.56	22.32			11.13	28.32			13.49	33.54	17.12	41.03	2.11	5.96	3.05	8.52	6.02	16.40	8.56	22.77	0.0130
5	125	141.3							6.55	21.77	6.55	21.77			9.53	30.97	9.53	30.97			12.70	40.28			15.88	49.11	19.05	57.43	2.77	9.67	3.40	11.82	6.55	22.20	9.53	31.59	0.0199
6	150	168.3							7.11	28.26	7.11	28.26			10.97	42.56	10.97	42.56			14.27	54.20			18.26	67.56	21.95	79.22	2.77	11.55	3.40	14.13	7.11	28.83	10.97	43.42	0.028
8	200	219.1			6.35	33.31	7.04	36.81	8.18	42.55	8.18	42.55	10.31	53.08	12.70	64.64	12.70	64.64	15.09	75.92	18.26	90.44	20.62	100.92	23.01	111.27	22.23	107.92	2.77	15.09	3.76	20.37	8.18	43.39	12.70	65.95	0.048
10	250	273.1			6.35	41.77	7.80	51.03	9.27	60.31	9.27	60.31	12.70	81.55	12.70	81.55	15.09	96.01	18.26	114.75	21.44	133.06	25.40	155.15	28.58	172.33	25.40	155.15	3.40	23.08	4.19	28.34	9.27	61.52	12.70	83.19	0.074
12	300	323.9			6.35	49.73	8.38	65.20	9.53	73.88	10.31	79.73	14.27	108.96	12.70	97.46	17.48	132.08	21.44	159.91	25.40	186.97	28.58	208.14	33.32	238.76	25.40	186.97	3.96	31.89	4.57	36.73	9.53	75.32	12.70	99.43	0.104
14	350	355.6	6.35	54.69	7.92	67.90	9.53	81.33	9.53	81.33	11.13	94.55	15.09	126.71	12.70	107.39	19.05	158.10	23.83	194.96	27.79	224.65	31.75	253.56	35.71	281.71			3.96	35.06	4.78	42.14					0.126
16	400	406.4	6.35	62.64	7.92	77.83	9.53	93.27	9.53	93.27	12.70	123.30	16.66	160.12	12.70	123.30	21.44	203.53	26.19	245.56	30.96	286.64	36.53	333.19	40.49	365.35			4.19	42.41	4.78	48.26					0.165
18	450	457.0	6.35	70.57	7.92	87.71	11.13	122.38	9.53	105.16	14.27	155.80	19.05	205.74	12.70	139.15	23.88	254.55	29.36	309.62	34.93	363.56	39.67	408.26	45.24	459.37			4.19	47.77	4.78	54.36					0.208
20	500	508.0	6.35	78.55	9.53	117.15	12.70	155.12	9.53	117.15	15.09	183.42	20.62	247.83	12.70	155.12	26.19	311.17	32.54	381.53	38.10	441.49	44.45	508.11	50.01	564.81			4.78	60.46	5.54	70.00					0.258
22	550	559.0	6.35	86.54	9.53	129.13	12.70	171.09	9.53	129.13			22.23	294.25	12.70	171.09	28.58	373.83	34.93	451.42	41.28	527.02	47.63	600.63	53.98	672.26			4.78	66.57	5.54	77.06					0.312
24	600	610.0	6.35	94.53	9.53	141.12	14.27	209.64	9.53	141.12	17.48	255.41	24.61	355.26	12.70	187.06	30.96	442.08	38.89	547.71	46.02	640.03	52.37	720.15	59.54	808.22			5.54	84.16	6.35	96.37					0.372
26	650	660.0	7.92	127.36	12.70	202.72			9.53	152.87					12.70	202.72																					0.435
28	700	711.0	7.92	137.32	12.70	218.69	15.88	271.21	9.53	164.85					12.70	218.69																					0.505
30	750	762.0	7.92	147.28	12.70	234.67	15.88	292.18	9.53	176.84					12.70	234.67													6.35	120.72	7.92	150.36					0.580
32	800	813.0	7.92	157.24	12.70	250.64	15.88	312.15	9.53	188.82	17.48	342.91			12.70	250.64						M															0.660
34	850	864.0	7.92	167.20	12.70	266.61	15.88	332.12	9.53	200.31	17.48	364.90			12.70	266.61			1					I													0.746
36	900	914.0	7.92	176.96	12.70	282.27	15.88	351.70	9.53	212.56	19.05	420.42			12.70	282.27					M																0.835
38	950	965.0							9.53	224.54					12.70	298.24					A																0.931
40	1000	1016.0							9.53	236.53					12.70	314.22				4						j-											1.032
42	1050	1067.0							9.53	248.52					12.70	330.19					1																1.138
44	1100	1118.0							9.53	260.50					12.70	346.16						V)															1.249
46	1150	1168.0							9.53	272.25					12.70	351.82																					1.364
48	1200	1219.0							9.53	284.24					12.70	377.79																					1.485

### **Conversion Table**

**English System** 



	Wall = Wall thickness in inches Wt = Weight in lbs/ft															Figi	ires ha	sed or	1 Auste		Shipping																
Nomin Si		O.D.	Sche	dule 10	Sche	dule 20 Wt	Sche	edule 30	Sta Wall	ındard		lule 40		dule 60		dule XS	Schedule 80 Wall Wt		Sched	ule 100 Wt	Sched	ule 120 Wt	Sched	ule 140 Wt	Sched	ule 160 Wt	Schedule XXS Wall Wt			Schedule 5S Wall Wt						ule 80S	Vol/ft ft3
inch	mm	inches	wall	vvt	Wall	VVI	VVali	VVL	vvali	vvt	VVali	VVI	Wall	vvi	vvaii	VVI	Wall	VVI	Wall	VVI	vvali	VVI	Wall	VVI	Wall	VVI	vvali	VVI	Wall	VVI	Wall	VVI	wali	VVI	Wall	VVI	11.5
1/8	5	0.405							0.068	0.24	0.068	0.24			0.095	0.31	0.095	0.31													0.049	0.19	0.068	0.24	0.950	0.32	0.004
1/4	8	0.540							0.088	0.42	0.088	0.42			0.119	0.54	0.119	0.54													0.065	0.34	0.088	0.43	0.119	0.55	0.007
3/8	10	0.675							0.091	0.57	0.091	0.57			0.126	0.74	0.126	0.74													0.065	0.43	0.091	0.58	0.126	0.75	0.011
1/2	15	0.840							0.109	0.85	0.109	0.85			0.147	1.09	0.147	1.09							0.188	1.31	0.294	1.71	0.065	0.55	0.083	0.68	0.109	0.87	0.147	1.11	0.014
3/4	20	1.050							0.113	1.13	0.113	1.13			0.154	1.47	0.154	1.47							0.219	1.94	0.308	2.44	0.065	0.70	0.083	0.88	0.113	1.15	0.154	1.50	0.025
1	25	1.315							0.133	1.68	0.133	1.68			0.179	2.17	0.179	2.17							0.250	2.84	0.358	3.66	0.065	0.89	0.109	1.43	0.133	1.71	0.179	2.21	0.039
1 1/4	32	1.660							0.140	2.27	0.140	2.27			0.191	3.00	0.191	3.00							0.250	3.76	0.382	5.21	0.065	1.13	0.109	1.85	0.140	2.32	0.191	3.06	0.064
1 1/2	40	1.900							0.145	2.72	0.145	2.72			0.200	3.63	0.200	3.63							0.281	4.86	0.400	6.41	0.065	1.31	0.109	2.13	0.145	2.77	0.200	3.70	0.081
2	50	2.375							0.154	3.65	0.154	3.65			0.218	5.02	0.218	5.02							0.344	7.46	0.436	9.03	0.065	1.64	0.109	2.69	0.154	3.72	0.218	5.12	0.127
2 1/2	65	2.875							0.203	5.79	0.203	5.79			0.276	7.66	0.276	7.66							0.375	10.01	0.552	13.69	0.083	2.53	0.120	3.60	0.203	5.91	0.276	7.81	0.187
3	80	3.500							0.216	7.58	0.216	7.58			0.300	10.25	0.300	10.25							0.438	14.32	0.600	18.58	0.083	3.09	0.120	4.42	0.216	7.73	0.300	14.46	0.279
3 1/2	90	4.000							0.226	9.11	0.226	9.11			0.318	12.50	0.318	12.50											0.083	3.55	0.120	5.00	0.226	9.29	0.318	12.76	0.364
4	100	4.500							0.237	10.79	0.237	10.79			0.337	14.98	0.337	14.98			0.438	19.00			0.531	22.51	0.674	27.54	0.083	4.00	0.120	5.72	0.237	11.01	0.337	15.28	0.459
5	125	5.563							0.258	14.62	0.258	14.62			0.375	20.78	0.375	20.78			0.500	27.04			0.625	32.96	0.750	38.55	0.109	6.49	0.134	7.93	0.258	14.91	0.375	21.20	0.703
6	150	6.625							0.280	18.97	0.280	18.97			0.432	28.57	0.432	28.57			0.562	36.39			0.719	45.35	0.864	53.16	0.109	7.75	0.134	9.48	0.278	19.35	0.432	29.14	0.989
8	200	8.625			0.250	22.36	0.277	24.70	0.322	28.55	0.322	28.55	0.406	35.64	0.500	43.39	0.500	43.39	0.594	50.95	0.719	60.71	0.812	67.76	0.906	74.69	0.875	72.42	0.109	10.13	0.148	13.67	0.322	29.12	0.500	44.26	1.695
10	250	10.750			0.250	28.04	0.307	34.24	0.365	40.48	0.365	40.48	0.500	54.74	0.500	54.74	0.594	64.43	0.719	77.03	0.844	89.29	1.000	104.13	1.125	115.64	1.000	104.13	0.134	15.49	0.165	19.02	0.365	41.29	0.500	55.83	2.613
12	300	12.750			0.250	33.38	0.330	43.77	0.375	49.56	0.406	53.52	0.562	73.15	0.500	65.42	0.688	88.63	0.844	107.32	1.000	125.49	1.125	139.67	1.312	160.27	1.000	125.49	0.156	21.40	0.180	24.65	0.375	50.55	0.500	66.73	3.673
14	350	14.000	0.250	36.71	0.312	45.61	0.375	54.57	0.375	54.57	0.438	63.44	0.594	85.05	0.500	72.09	0.750	106.13	0.938	130.85	1.094	150.79	1.250	170.21	1.406	189.11			0.156	23.53	0.188	28.28					4.450
16	400	16.000	0.250	42.05	0.312	52.27	0.375	62.58	0.375	62.58	0.500	82.77	0.656	107.50	0.500	82.77	0.844	136.61	1.031	164.82	1.219	192.43	1.438	223.64	1.594	245.25			0.165	28.46	0.188	32.39					5.827
18	450	18.000	0.250	47.39	0.312	58.94	0.438	82.15	0.375	70.59	0.562	104.67	0.750	138.17	0.500	93.45	0.938	170.92	1.156	207.96	1.375	244.14	1.562	274.22	1.781	308.50			0.165	32.06	0.188	36.48					7.345
20	500	20.000	0.250	52.73	0.375	78.60	0.500	104.13	0.375	78.60	0.594	123.11	0.812	166.40	0.500	104.13	1.031	208.87	1.281	256.10	1.500	296.37	1.750	341.09	1.969	379.17			0.188	40.58	0.218	46.98					9.111
22	550	22.000	0.250	58.07	0.375	86.61	0.500	114.81	0.375	86.61			0.875	197.41	0.500	114.81	1.125	250.81	1.375	302.88	1.625	353.61	1.875	403.00	2.125	451.06			0.188	44.68	0.218	51.72					11.018
24	600	24.000	0.250	63.41	0.375	94.62	0.562	140.68	0.375	94.62	0.688	171.29	0.969	238.35	0.500	125.49	1.219	296.58	1.531	367.39	1.812	429.39	2.062	483.12	2.344	542.13			0.218	56.48	0.250	64.68					13.137
26	650	26.000	0.312	85.60	0.500	136.17			0.375	102.63					0.500	136.17																					15.361
28	700	28.000	0.312	92.26	0.500	146.85	0.625	182.73	0.375	110.64					0.500	146.85																					17.833
30	750	30.000	0.312	98.93	0.500	157.53	0.625	196.08	0.375	118.65					0.500	157.53													0.250	81.02	0.312	100.91					20.482
32	800	32.000	0.312	105.59	0.500	168.21	0.625	209.43	0.375	126.66	0.688	230.08			0.500	168.21					/	1															23.307
34	850	34.000	0.312	112.25	0.500	178.89	0.625	222.78	0.375	134.67	0.688	244.77			0.500	178.89				1		1		$\overline{Z}$													26.344
36	900	36.000	0.312	118.92	0.500	189.57	0.625	236.13	0.375	142.68	0.750	282.35			0.500	189.57			7	1	1			7													29.487
38	950	38.000							0.375	150.69					0.500	200.25																					32.877
40	1000	40.000							0.375	158.70					0.500	210.93				<u> </u>	1																36.444
42	1050	42.000							0.375	166.71					0.500	221.61					7					/											40.187
44	1100	44.000							0.375	174.72					0.500	232.29					1	W.															44.107
46	1150	46.000							0.375	182.73					0.500	242.97																					48.168
48	1200	48.000							0.375	190.74					0.500	253.65																					52.441
									1																								L				

