

performance through experience & knowledge



ISO 9001:2015
ISO 14001:2015
OHSAS 45001:2018
PED 2014 / 68 / EU
AD 2006-Merkblatt W0
EIL - (Engineers India Limited)

Certified Company

PATELS AIRFLOW LIMITED

(TUBE DIVISION)

Manufacturer and Exporter of Seamless Carbon / Alloy /
Stainless Steel Straight Tubes / Pipes, "U" Tubes / Pipes

COMPANY PROFILE



PATELS AIRFLOW LIMITED
(TUBE DIVISION)

Our products find wide and increasing application (s) / substitute (s) in

- ◆ Chemical Plant
- ◆ Food and Beverages
- ◆ Hydraulic & pneumatic applications
- ◆ Heat Transfer Equipments like Boiler
- ◆ Chilling Plant
- ◆ General Engineering
- ◆ Power Plant
- ◆ Heat Exchanger, Condenser
- ◆ Pharmaceutical Machinery
- ◆ Defence
- ◆ Automobiles Industries

Patels Airflow Ltd. is a reputed group in the field of Industrial Engineering products since 1973. Our quality, commitment and client friendly attitude made us stand with the high head in the industry for more than four decades. After successful journey of four decades, we diversified & launched our new venture Patels Airflow Ltd. (Tube Division) in 2008. Our steel tube manufacturing plant is situated at Ahmedabad, the commercial hub of economic tiger and vibrant Gujarat state in India. We are manufacturing Fine Quality Carbon / Alloy / Stainless Steel Cold Finished Seamless Tubes & Pipes with respect to ASTM, ASME, DIN, BS, EN, IS etc. standards & also with customized dimensions to suit your needs.

We have an installed capacity of 300 MT per month with scope of Expansion to about 500 MT per month. We have a team of dynamic entrepreneurs as well as top professionals from steel tube industry with rich experience and vertical knowledge of each step of production, process, quality and R & D.

Quality products, competitive pricing and after sales support are our core strengths. We "Never Compromise for quality and integrity." We are now in action & paying attention to develop Nationwide as well as International market.

We are an innovative, responsive, flexible & an entrepreneurial organization as we structure our business around the needs of our valued customers. We reflect the ideas to serve our customer's specific needs by emerging the Strategic Business Units (SBU's). Both SBU's have a full control to effect changes in divisional operations.





PRODUCTS

CARBON STEEL COLD FINISHED SEAMLESS STRAIGHT TUBES / PIPES

Size Range : | **Outer Diameter** : 6 mm - 273.00 mm | **Thickness** : 0.7 mm - 13.49 mm | **Length** : MAX - 25 mtr.

ST. SPECIFICATION	APPLICATIONS
ASTM A 53 / SA 53	Seamless Carbon Steel Pipes for Mechanical & Pressure application & also for ordinary use. in Steam, Water, Gas, Airlines.
ASTM A 106 / SA 106	Seamless Carbon Steel Pipes for High - Temperature Service.
ASTM A 179 / SA 179	Seamless Cold-Drawn Low - Carbon Steel Tubes for Heat-Exchanger and Condenser.
ASTM A 192 / SA 192	Seamless Carbon Steel Boiler Tubes for High-Pressure Service.
ASTM A 210 / SA 210	Seamless Medium-Carbon Steel Tubes for Boiler and Superheater.
ASTM A 333 / SA 333	Seamless Carbon and Alloy Steel Pipes for Low-Temperature Service.
ASTM A 334 / SA 334	Seamless Carbon and Alloy Steel Tubes for Low-Temperature Service.
ASTM A 822	Seamless Cold-Drawn Carbon Steel Tubing for Hydraulic System Service.
BS 980	Seamless Steel Tubes for Automobile Purposes.
BS 3059 PART-I	Seamless Low Tensile Carbon Steel Tubes for Boiler and Superheater.
BS 3059 PART-II	Seamless Carbon Steel / Alloy Steel Tubes for Boiler and Superheater.
BS 3602	Seamless Carbon Steel Pipes and Tubes for Pressure Purposes.
BS 6323 PART4	Seamless Steel Tubes for Automobile, Mechanical & General Engineering Purposes.
DIN 2391	Seamless Precision Steel Tubes for Mechanical and Automotive Engineering.
DIN 17175	Seamless Tubes of Heat resistant Steels used in Boilers, Pressure Vessels & Equipment for service upto 600° C and at High Pressures.
IS : 1239	Mild Steel Tubes for use in Water, Gas, Airlines & Steam.
IS : 3074	Seamless Steel Tubes for Automotive Purposes.
IS : 3601	Seamless Steel Tubes for Mechanical and General Engineering Purposes.
IS : 4923	Seamless Cold Formed Square Hollow Steel sections for structural use.
DIN EN 10216-2	Seamless Non - Alloy & Alloy Steel Tubes for Pressure Purposes.
DIN EN 10297-1	Seamless Non - Alloy & Alloy Steel Tubes for Mechanical & General Engineering Purposes.
DIN EN 10305-1	Seamless Steel Tubes for Precision Applications.

ALLOY STEEL COLD FINISHED SEAMLESS STRAIGHT TUBES / PIPES

Size Range : | **Outer Diameter** : 6 mm - 273.00 mm | **Thickness** : 0.7 mm - 13.49 mm | **Length** : MAX - 25 mtr.

ST. SPECIFICATION	APPLICATIONS
ASTM A 213 / SA 213	Seamless Alloy Steel Tubes for Boiler, Superheater & Heat - Exchanger.
ASTM A 333 / SA 333	Seamless Carbon and Alloy Steel Pipes for Low-Temperature Service.
ASTM A 334 / SA 334	Seamless Carbon and Alloy Steel Tubes for Low-Temperature Service.
ASTM A 335 / SA 335	Seamless Ferritic Alloy Steel Pipe for High-Temperature Service.
BS 3059 PART - II	Seamless Carbon / Alloy Steel Tubes for Boiler and Superheater.
DIN EN 10216 - 2	Seamless Non - Alloy & Alloy Steel Tubes for Pressure Purposes.
DIN EN 10297 - 1	Seamless Non - Alloy & Alloy Steel Tubes for Mechanical & General Engineering Purposes.

SEAMLESS STEEL TUBES / PIPES

STAINLESS STEEL COLD FINISHED SEAMLESS STRAIGHT TUBES / PIPES

Size Range : | **Outer Diameter** : 6 mm - 273.05 mm | **Thickness** : 0.7 mm - 13.49 mm | **Length** : MAX - 25 mtr.

ST. SPECIFICATION	APPLICATIONS
ASTM A 213 / SA 213	Seamless Ferritic and Austenitic Alloy Steel Boiler, Super Heater & Heat Exchanger Tubes.
ASTM A 269 / SA 269	Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
ASTM A 312 / SA 312	Seamless and Welded Austenitic Stainless Steel Pipes.
ASTM A 268 / SA 268	Seamless and Welded Ferritic and Martensitic Stainless Steel Tubing for General Service.
ASTM A 789 / SA 789	For Seamless and Welded Duplex Stainless Steel Tubes, Pipes and 'U' Tubes.
DIN EN 10216-5	Seamless Stainless Steel Tubes for Pressure Purposes.

CARBON STEEL / ALLOY STEEL / STAINLESS STEEL COLD FINISHED SEAMLESS 'U' TUBES / PIPES

Size Range : | **Outer Diameter** : 12.70 mm - 60.30 mm | **Thickness** : 1.24 mm - 5 mm | **Radius** : 1.5D to 1 mtr.

• TEMA CODE (U - Tubes used in Heat Exchangers) • ASTM A 556 / SA 556 (U - Tubes for use in Tubular Feed Water Heaters)

GRADES

MATERIAL	ASTM		EQUIVALENT STANDARD		
	UNS	GRADE (TP)	DIN (EN)	AFNDR (NF)	JIS
AUSTENITIC	S30400	304	1.4301	Z6CN18.09	SUS304
	S30403	304L	1.4307	Z2CN18.10	SUS304L
	S31600	316	1.4401	Z6CND17.11	SUS316
	S31603	316L	1.4404	Z2CND17.12	SUS316L
	S31635	316TI	1.4571	Z2CND17.12	-
	S32100	321	1.4541	Z6CNT18.10	SUS321
	S34700	347	1.4550	Z6CNNb18.10	SUS347
	S30409	304H	1.4948	Z6CN19.10	SUS304H
	S31609	316H	1.4919	Z6CND17.12	SUS316H
	S32109	321H	1.4941	Z10CND18.10	SUS321H
FERRITIC	S40500	405	1.4002	Z6CAL13	SUS405
	S41000	410	1.4006	Z12C13	SUS410
	S43000	430	1.4016	Z10C17	SUS430
DUPLEX	S31803	-	1.4462	Z2CND22.05	-

DIMENSIONS OF IMPERIAL STANDARD WIRE GAUGE / BIRMINGHAM WIRE GAUGE (MM)

GAUGE	SWG	BWG	GAUGE	SWG	BWG	GAUGE	SWG	BWG	GAUGE	SWG	BWG	GAUGE	SWG	BWG
1	7.62	7.62	6	4.88	5.16	11	2.95	3.05	16	1.62	1.65	21	0.81	0.81
2	7.01	7.21	7	4.47	4.57	12	2.64	2.77	17	1.42	1.47	22	0.71	0.71
3	6.4	6.58	8	4.06	4.19	13	2.34	2.41	18	1.22	1.24	23	0.61	0.64
4	5.89	6.05	9	3.66	3.76	14	2.03	2.11	19	1.02	1.07	24	0.56	0.56
5	5.38	5.59	10	3.25	3.4	15	1.83	1.83	20	0.91	0.89	25	0.51	0.51



DIMENSIONS AND WEIGHT OF CARBON STEEL / ALLOY STEEL SEAMLESS PIPE (ASME B 36.10M-2004)

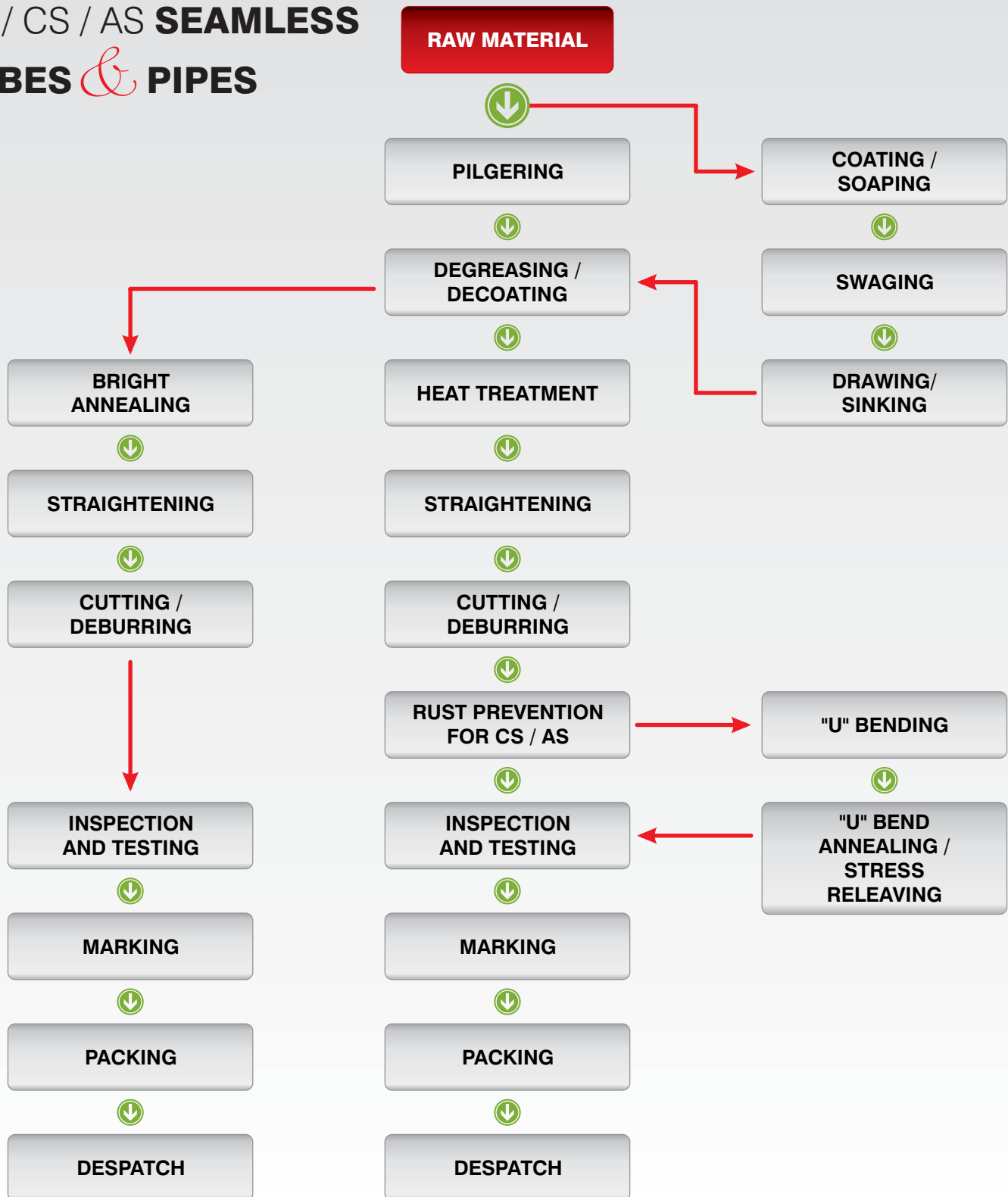
NOMINAL PIPE SIZE			OD		SCHEDULE NO.													
					SCH 5		SCH 10		SCH 30		SCH 40		SCH 80		SCH 160		SCH XXS	
					THK	WEIGHT	THK	WEIGHT	THK	WEIGHT	THK	WEIGHT	THK	WEIGHT	THK	WEIGHT	THK	WEIGHT
DN	INCH NB	MM	MM	KG/MTR	MM	KG/MTR	MM	KG/MTR	MM	KG/MTR	MM	KG/MTR	MM	KG/MTR	MM	KG/MTR		
6	1/8	10.3	-	-	1.24	0.28	1.45	0.32	1.73	0.37	2.41	0.47	-	-	-	-		
8	1/4	13.7	-	-	1.65	0.49	1.85	0.54	2.24	0.63	3.02	0.80	-	-	-	-		
10	3/8	17.1	-	-	1.65	0.63	1.85	0.70	2.31	0.84	3.20	1.10	-	-	-	-		
15	1/2	21.3	1.65	0.8	2.11	1.00	2.41	1.12	2.77	1.27	3.73	1.62	4.78	1.95	7.47	2.55		
20	3/4	26.7	1.65	1.03	2.11	1.28	2.41	1.44	2.87	1.69	3.91	2.20	5.56	2.9	7.82	3.64		
25	1	33.4	1.65	1.29	2.77	2.09	2.90	2.18	3.38	2.50	4.55	3.24	6.35	4.24	9.09	5.45		
32	1 1/4	42.2	1.65	1.65	2.77	2.69	2.97	2.87	3.56	3.39	4.85	4.47	6.35	5.61	9.7	7.77		
40	1 1/2	48.3	1.65	1.9	2.77	3.11	3.18	3.53	3.68	4.05	5.08	5.41	7.14	7.25	10.15	9.55		
50	2	60.3	1.65	2.39	2.77	3.93	3.18	4.48	3.91	5.44	5.54	7.48	8.74	11.11	11.07	13.44		
65	2 1/2	73.0	2.11	3.69	3.05	5.26	4.78	8.04	5.16	8.63	7.01	11.41	9.53	14.92	14.02	20.39		
80	3	88.9	2.11	4.52	3.05	6.46	4.78	9.92	5.49	11.29	7.62	15.27	11.13	21.35	15.24	27.68		
90	3 1/2	101.6	2.11	5.18	3.05	7.41	4.78	11.41	5.74	13.57	8.08	18.64	-	-	-	-		
100	4	114.3	2.11	5.84	3.05	8.37	4.78	12.91	6.02	16.08	8.56	22.32	13.49	33.54	17.12	41.03		
125	5	141.3	2.77	9.46	3.40	11.56	-	-	6.55	21.77	9.53	30.97	15.88	49.12	19.05	57.43		
150	6	168.3	-	-	-	-	-	-	7.11	28.26	10.97	42.56	18.26	67.57	21.95	79.22		
200	8	219.10	2.77	14.78	3.76	19.97	7.04	36.82	8.18	42.55	12.70	64.64	23.01	111.27	22.23	107.93		
250	10	273.00	3.40	22.61	4.19	27.78	7.80	51.01	9.27	60.29	15.09	95.98	28.58	172.27	25.4	155.10		

DIMENSIONS AND WEIGHT OF SEAMLESS STAINLESS STEEL PIPE (ANSI / ASME 36.19 m)

NOMINAL PIPE SIZE		OD		SCHEDULE NO.							
				5 S		10 S		40 S		80 S	
				WALL THICKNESS AND WEIGHT							
DN	INCH NB	MM	MM	kg/m	MM	kg/m	MM	kg/m	MM	kg/m	
8	1/4	13.72	1.24	0.387	1.65	0.498	2.24	0.643	3.02	0.808	
10	3/8	17.15	1.24	0.498	1.65	0.640	2.31	0.857	3.20	1.116	
15	1/2	21.34	1.65	0.812	2.11	1.014	2.77	1.286	3.73	1.642	
20	3/4	26.67	1.65	1.032	2.11	1.300	2.87	1.708	3.91	2.225	
25	1	33.40	1.65	1.310	2.77	2.121	3.38	2.537	4.55	3.282	
32	1 1/4	42.16	1.65	1.671	2.77	2.728	3.56	3.435	4.85	4.524	
40	1 1/2	48.26	1.65	1.923	2.77	3.150	3.68	4.101	5.08	5.484	
50	2	60.33	1.65	2.421	2.77	3.989	3.91	5.515	5.54	7.588	
65	2 1/2	73.03	2.11	3.741	3.05	5.336	5.16	8.756	7.01	11.570	
80	3	88.90	2.11	4.578	3.05	6.546	5.49	11.449	7.62	15.484	
90	3 1/2	101.60	2.11	5.258	3.05	7.514	5.74	13.756	8.08	18.891	
100	4	114.30	2.11	5.981	3.05	8.483	6.02	16.298	8.56	22.628	
125	5	141.30	2.77	9.593	3.40	11.721	6.55	22.065	9.52	31.364	
150	6	168.28	2.77	11.461	3.40	14.014	7.11	28.648	10.97	43.142	
200	8	219.08	2.77	14.979	3.76	20.240	8.18	43.129	12.70	65.526	
250	10	273.05	3.40	22.920	4.19	28.163	9.27	61.131	12.70	82.661	

MANUFACTURING PROCESS

SS / CS / AS SEAMLESS TUBES & PIPES





QUALITY POLICY - APPROVAL & CERTIFICATION

Bureau Veritas Certification

PATELS AIRFLOW LTD.

61, PHASE-1, G.I.D.C., INDUSTRIAL ESTATE, VATVA, AHMEDABAD - 382 445, GUJARAT, INDIA.

Bureau Veritas Certification Holding SAS - UK Branch certifies that the Management System of the above organization has been audited and found to be in accordance with the requirements of the Management System standard detailed below.

Standard
ISO 9001:2015
Scope of certification

FAN DIVISION: DESIGN, MANUFACTURE & DISPATCH OF INDUSTRIAL FANS AND BLOWERS FOR INDUSTRIAL AND OIL & GAS SECTORS
TUBE DIVISION: MANUFACTURE & DISPATCH OF STAINLESS STEEL/ CARBON STEEL/ALLOY STEEL COLD FINISH SEAMLESS TUBES/PIPES (STRAIGHT & U TUBES) FOR INDUSTRIAL AND OIL & GAS SECTORS

Original cycle start date: 08 August 2008
Expiry date of previous cycle: 07 August 2020
Recertification Audit date: 15 July 2020
Recertification cycle start date: 07 August 2020
Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: 07 August 2023
Certificate No. **IND.20.9744/OM/U** Version : 1 Revision date: 07 August 2020

Signed on behalf of BUREAU VERITAS - UK Branch
Jagdish K. RAJANI
Head - CERTIFICATION, South Asia
Commodities, Industry & Facilities Division

UKAS
0018

INTEGRATED MANAGEMENT SYSTEM POLICY

The **PATELS AIRFLOW LIMITED** integrated management system policy calls for continuous improvement in its integrated management activity and business will be conducted accordingly to the following principles.

- Improved customer satisfaction by analyzing and understanding their requirements and providing superior quality products.
- The company shall continuously strive to adopt in plant design, equipment, operations, maintenance, environment, occupational, health and safety.
- Providing all employees the relevant training for work improvement and motivation.
- Compliance with applicable legal and other requirement with respect to environment, occupational, health and safety.
- Adopt and implement environment friendly process, practices and actions.
- Company is committed for reduction and prevention of accidents, illness and accidentally loss of time and resources.
- Company is committed for reduction and prevention of environmental pollution from operations and activities under taken by the organization.
- Take due care to ensure that activities are safe for all employee, associates, contractors, sub contractors and others who come in to contact with our work.
- Maintain safer & healthy work environment.
- Comply safety and health of surrounding community at each of its operations and activities.

Place : Ahmedabad
Date : 01st August, 2013

Managing Director
B. I. Patel

Certificate of Registration

This is to Certify that Environmental Management System of **PATELS AIRFLOW LTD.**

61, PHASE-1, G.I.D.C INDUSTRIAL ESTATE, VATVA, AHMEDABAD - 382445, GUJARAT, INDIA.

has been assessed and found to conform to the requirements of **ISO 14001:2015** for the following scope :

FAN DIVISION: DESIGN, MANUFACTURE & SUPPLY OF INDUSTRIAL FANS & BLOWERS.
TUBE DIVISION: MANUFACTURE & SUPPLY OF STAINLESS STEEL/ CARBON STEEL/ ALLOY STEEL/ COLD FINISHED SEAMLESS TUBES / PIPES (STRAIGHT & "U" TUBES) FOR INDUSTRIAL AND OIL & GAS SECTORS.

Certificate No : 19IEEP28
Initial Registration Date : 06/01/2020 Issuance Date : 06/01/2020
Date of Expiry : 05/01/2023
1st Surve. Due : 06/12/2020 2nd Surve. Due : 06/12/2021

Director
AQCC MIDDLE EAST FZE.

ACCREDITED Management System Certification Body
IAS
MSCB-119

HEAD OFFICE: 19, AL-SAYED ST., AMMAN, JORDAN. TEL: +962 77 500 0000. FAX: +962 77 500 0001. EMAIL: info@aqccmiddleeast.com

Certificate of Registration

This is to Certify that Occupational Health & Safety Management System of **PATELS AIRFLOW LTD.**

61, PHASE-1, G.I.D.C INDUSTRIAL ESTATE, VATVA, AHMEDABAD - 382445, GUJARAT, INDIA.

has been assessed and found to conform to the requirements of **ISO 45001:2018** for the following scope :

FAN DIVISION: DESIGN, MANUFACTURE & SUPPLY OF INDUSTRIAL FANS & BLOWERS.
TUBE DIVISION: MANUFACTURE & SUPPLY OF STAINLESS STEEL/ CARBON STEEL/ ALLOY STEEL/ COLD FINISHED SEAMLESS TUBES / PIPES (STRAIGHT & "U" TUBES) FOR INDUSTRIAL AND OIL & GAS SECTORS.

Certificate No : 19IOBH33
Initial Registration Date : 06/01/2020 Issuance Date : 06/01/2020
Date of Expiry : 05/01/2023
1st Surve. Due : 06/12/2020 2nd Surve. Due : 06/12/2021

Director
AQCC MIDDLE EAST FZE.

ACCREDITED Management System Certification Body
IAS
MSCB-119

HEAD OFFICE: 19, AL-SAYED ST., AMMAN, JORDAN. TEL: +962 77 500 0000. FAX: +962 77 500 0001. EMAIL: info@aqccmiddleeast.com

APPROVAL & CERTIFICATION





and many more...

PRODUCT SPECIFICATIONS

CARBON STEEL / ALLOY STEEL COLD FINISHED SEAMLESS TUBES / PIPES

Specification	Type	CHEMICAL ANALYSIS										MECHANICAL PROPERTIES				
		C% Max	Mn% Max	P% Max	S% Max	Si% Max	Cr% Max	Cu% Max	Mo% Max	Ni% Max	V % Max	Yield Strength Mpa	Tensile Strength Mpa	Elongation % 50 mm Min Longitudinal	Impact Test	Hardness
ASTM A/SA - 53/A	CS	0.25	0.95	0.050	0.045	-	0.40	0.40	0.15	0.40	0.08	205min	330min	36	-	-
ASTM A/SA - 53/B	CS	0.30	1.20	0.050	0.045	-	0.40	0.40	0.15	0.40	0.08	240min	415min	29.5	-	-
ASTM A/SA - 106/A	CS	0.25	0.27-0.93	0.035	0.035	0.10min	0.40	0.40	0.15	0.40	0.08	205min	330min	35	-	-
ASTM A/SA - 106/B	CS	0.30	0.29-1.06	0.035	0.035	0.10min	0.40	0.40	0.15	0.40	0.08	240min	415min	30	-	-
ASTM A/SA - 106/C	CS	0.35	0.29-1.06	0.035	0.035	0.10min	0.40	0.40	0.15	0.40	0.08	275min	485min	30	-	-
ASTM A/SA - 179	CS	0.06-0.18	0.27-0.63	0.035	0.035	-	-	-	-	-	-	180min	325min	35	-	72 HRB Max
ASTM A/SA - 192	CS	0.06-0.18	0.27-0.63	0.035	0.035	0.25	-	-	-	-	-	180min	325min	35	-	77 HRB Max
ASTM A/SA - 210/A1	CS	0.27	0.93	0.035	0.035	0.10min	-	-	-	-	-	255min	415min	30	-	79 HRB Max
ASTM A/SA - 210/C	CS	0.35	0.29-1.06	0.035	0.035	0.10min	-	-	-	-	-	275min	485min	30	-	89 HRB Max
ASTM A/SA - 213/T5 ASTM A/SA - 335/P5	AS	0.15	0.30-0.60	0.025	0.025	0.50	4.00-6.00	-	0.45-0.65	-	-	205min	415min	30	-	85 HRB Max
ASTM A/SA - 213/T11 ASTM A/SA - 335/P11	AS	0.05-0.15	0.30-0.60	0.025	0.025	0.50-1.00	1.00-1.50	-	0.44-0.65	-	-	205min	415min	30	-	85 HRB Max
ASTM A/SA - 213/T12 ASTM A/SA - 335/P12	AS	0.05-0.15	0.30-0.61	0.025	0.025	0.50	0.80-1.25	-	0.44-0.65	-	-	220min	415min	30	-	85 HRB Max
ASTM A/SA - 213/T22 ASTM A/SA - 335/P22	AS	0.05-0.15	0.30-0.60	0.025	0.025	0.50	1.90-2.60	-	0.87-1.13	-	-	205min	415min	30	-	85 HRB Max
ASTM A/SA - 333/1 ASTM A/SA - 334/1	CS	0.30	0.40-1.06	0.025	0.025	-	-	-	-	-	-	205min	380min	35	✓	85 HRB Max
ASTM A/SA - 333/6 ASTM A/SA - 334/6	CS	0.30	0.29-1.06	0.025	0.025	0.10min	-	-	-	-	-	240min	415min	30	✓	90 HRB Max
BS 3059/1/320	CS	0.16	0.30-0.70	0.050	0.050	-	-	-	-	-	-	195min	320-480	25	-	-
BS 3059/2/360	CS	0.17	0.40-0.80	0.045	0.045	0.35	-	-	-	-	-	215	360-500	24	-	-
DIN 17175/St 35.8	CS	0.17	0.40-0.80	0.040	0.040	0.10-0.35	-	-	-	-	-	235min	360-480	25	-	-
DIN 17175/St 45.8	CS	0.21	0.40-1.20	0.040	0.040	0.10-0.35	-	-	-	-	-	255min	410-530	21	-	-
DIN 17175/15Mo3	AS	0.12-0.20	0.40-0.80	0.035	0.035	0.10-0.35	-	-	0.25-0.35	-	-	270min	450-600	22	-	-
DIN 2391/St-35	CS	0.17	≥0.40	0.025	0.025	0.35	-	-	-	-	-	235min	340-470	25	-	-
DIN 2391/St-45	CS	0.21	≥0.40	0.025	0.025	0.35	-	-	-	-	-	255min	440-570	21	-	-
DIN 2391/St-52	CS	0.22	≥1.60	0.025	0.025	0.55	-	-	-	-	-	355min	490-630	22	-	-
IS 1239	MS	0.2	1.30	0.040	0.040	-	-	-	-	-	-	-	320min	-	-	-
DIN EN 10216-2/195GH	CS	≤0.13	≤0.70	0.025	0.02	≤0.35	≤0.30	≤0.30	≤0.08	≤0.30	≤0.02	195min	320-440	27	✓	-
DIN EN 10216-2/P235GH	CS	≤0.16	≤1.20	0.025	0.02	≤0.35	≤0.30	≤0.30	≤0.08	≤0.30	≤0.02	235min	360-500	25	✓	-
DIN EN 10216-2/P265GH	CS	≤0.20	≤1.40	0.025	0.02	≤0.40	≤0.30	≤0.30	≤0.08	≤0.30	≤0.02	265min	410-570	23	✓	-
DIN EN 10297-1/E235	CS	0.17	1.20	0.03	0.035	0.35	-	-	-	-	-	235min	360min	25	-	-
DIN EN 10297-1/E275	CS	0.21	1.40	0.03	0.035	0.35	-	-	-	-	-	275min	410min	22	-	-
DIN EN 10297-2/E315	CS	0.21	1.50	0.03	0.035	0.3	-	-	-	-	-	315min	450min	21	-	-
DIN EN 10297-2/E355	CS	0.22	1.60	0.03	0.035	0.55	-	-	-	-	-	355min	490min	20	-	-
DIN EN 10305-1/E235	CS	0.17	1.20	0.025	0.025	0.35	-	-	-	-	-	235min	340-480	25	-	-
DIN EN 10305-1/E355	CS	0.22	1.60	0.025	0.025	0.55	-	-	-	-	-	355min	490-630	22	-	-

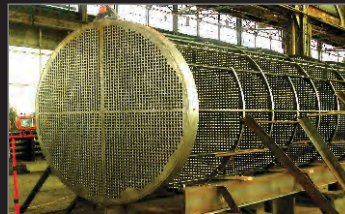


PRODUCT SPECIFICATIONS

STAINLESS STEEL COLD FINISHED SEAMLESS TUBES / PIPES

CHEMICAL ANALYSIS												MECHANICAL PROPERTIES			
Specifica- tion	Grade	C% Max	Mn% Max	P% Max	S% Max	Si% Max	Cr%	Mo% Max	Ni% Max	Nitro- gen	Ti	Tensile Strength Mpa	Yield Strength Mpa	Elongation % 50 mm Min Longitudinal	Hardness
ASTM A / SA-312	304	0.080	2.00	0.045	0.030	1.00	18.0-20.0		8.0-11.0			515	205	35	90 HRB
	304L	0.035	2.00	0.045	0.030	1.00	18.0-20.0		8.0-13.0			485	170	35	90 HRB
	316	0.080	2.00	0.045	0.030	1.00	16.0-18.0	2.0-3.0	11.0-14.0			515	205	35	90 HRB
	316L	0.035	2.00	0.045	0.030	1.00	16.0-18.0	2.0-3.0	10.0-14.0			485	170	35	90 HRB
	321	0.080	2.00	0.045	0.030	1.00	17.0-19.0		9.0-12.0	0.1	> 5xC% (0.70 max)	485	170	35	90 HRB
ASTM A / SA-213	304	0.080	2.00	0.045	0.030	1.00	18.0-20.0		8.0-11.0			515	205	35	90 HRB
	304L	0.035	2.00	0.045	0.030	1.00	18.0-20.0		8.0-12.0			485	170	35	90 HRB
	316	0.080	2.00	0.045	0.030	1.00	16.0-18.0	2.0-3.0	10.0-14.0			515	205	35	90 HRB
	316L	0.035	2.00	0.045	0.030	1.00	16.0-18.0	2.0-3.0	10.0-14.0			485	170	35	90 HRB
	316Ti	0.080	2.000	0.045	0.030	0.75	16.0-18.0	2.0-3.0	10.0-14.0	0.100	>5x(C+N) (0.70 max)	515	205	35	90 HRB
	321	0.080	2.00	0.045	0.030	1.00	17.0-19.0		9.0-12.0	0.1	>5x(C+N) (0.70 max)	515	205	35	90 HRB
ASTM A / SA-269	304	0.080	2.00	0.045	0.030	1.00	18.0-20.0		8.0-11.0			515	205	35	90 HRB
	304L	0.035	2.00	0.045	0.030	1.00	18.0-20.0		8.0-12.0			485	170	35	90 HRB
	316	0.080	2.00	0.045	0.030	1.00	16.0-18.0	2.0-3.0	10.0-14.0			515	205	35	90 HRB
	316L	0.035	2.00	0.045	0.030	1.00	16.0-18.0	2.0-3.0	10.0-15.0			485	170	35	90 HRB
	321	0.080	2.00	0.045	0.030	1.00	17.0-19.0		9.0-12.0	0.1	>5x(C+N) (0.70 max)	515	205	35	90 HRB
ASTM A / SA-268	410	0.15	1.00	0.040	0.030	1.00	11.50- 13.5					415	205	20	95 HRB
ASTM A / SA-789	S31803	0.03	2.00	0.030	0.020	1.00	21.0-23.0	2.5-3.5	4.5-6.5	0.08- 0.20		620	450	25	30 HRC
	S32304	0.03	2.50	0.040	0.040	1.00	21.5-24.5	0.05-0.60	3.0-5.5	0.05- 0.20	(Cu. 0.05-0.60)	690/600	450/400	25	30 HRC
EN 10216-5	Steel No.												0.2%	(5.65√So)	
	1.4307	0.03	2.00	0.040	0.015	1.00	17.5-19.5		8.0-10.0			460-680	180	40	
	1.4301	0.07	2.00	0.040	0.015	1.00	17.0-19.5		8.0-10.50			500-700	195	40	
	1.4541	0.08	2.00	0.040	0.015	1.00	17.0-19.0		9.0-12.0		> 5xC% (0.70 max)	500-730	200	35	
	1.4404	0.03	2.00	0.040	0.015	1.00	16.5-18.5	2.0-2.5	10.0-13.0			490-690	190	40	
	1.4401	0.07	2.00	0.040	0.015	1.00	16.5-18.5	2.0-2.5	10.0-13.0			510-710	205	40	
	1.4571	0.08	2.00	0.040	0.015	1.00	16.5-18.5	2.0-2.5	10.5-13.5		> 5xC% (0.70 max)	500-730	210	35	

SEGMENTS WE SERVE



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