

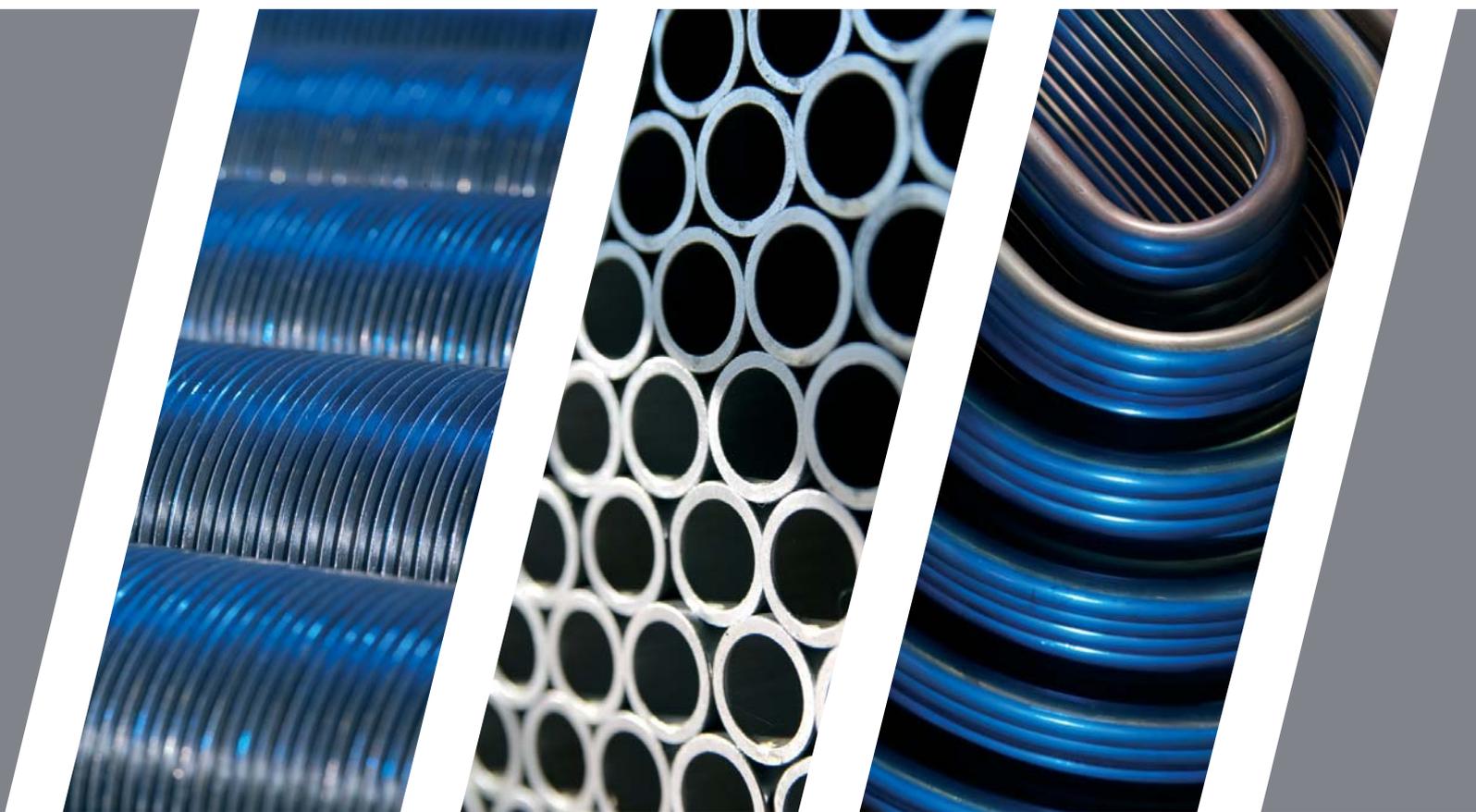


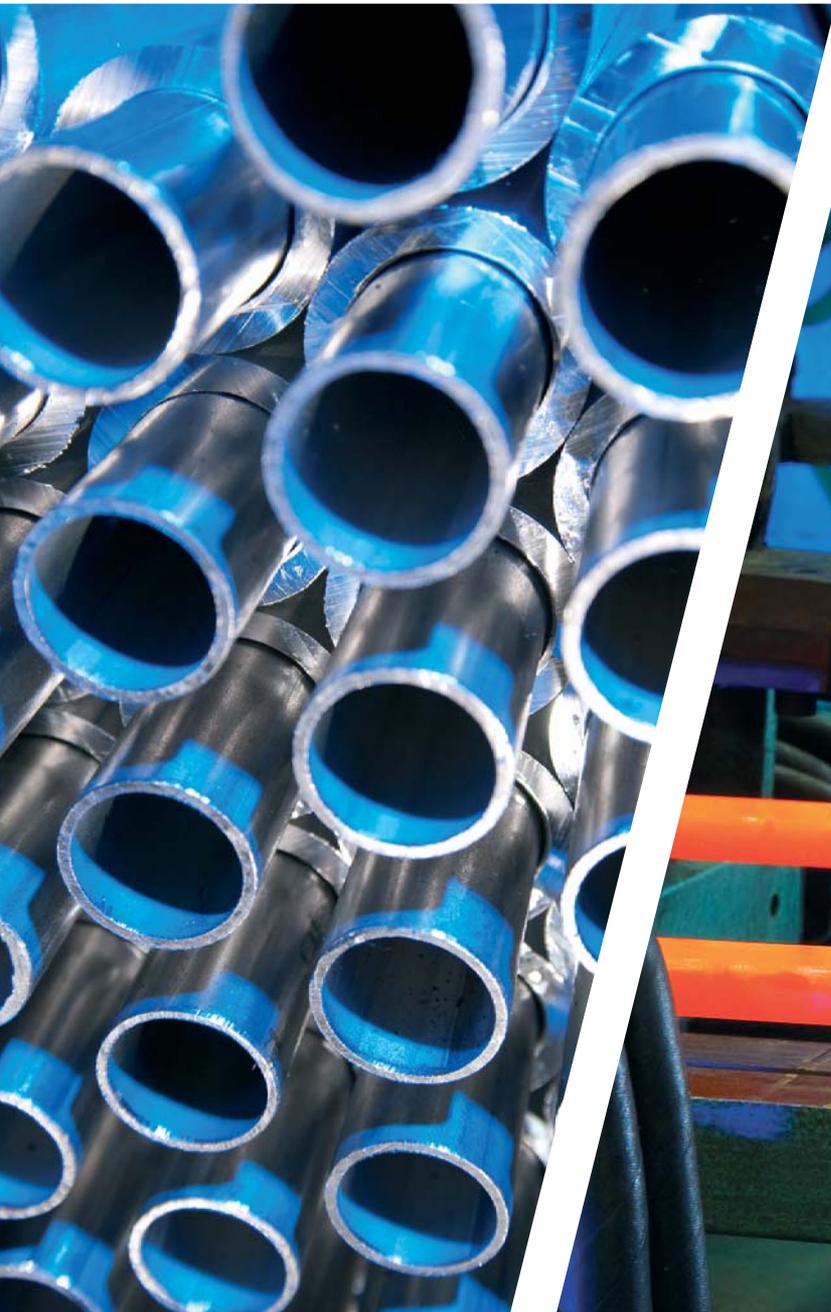
PROFINS LIMITED, BURDON DRIVE, NORTH WEST INDUSTRIAL ESTATE,
PETERLEE, COUNTY DURHAM SR8 2JH, UNITED KINGDOM.

TEL: 0044(0)191 586 7669 • TELEFAX: 0044(0)191 586 0777

EMAIL: info@profins.com • www.profins.com

PROFINS
FINNED • PLAIN • U TUBES







QUALITY, RELIABILITY AND EXPERTISE

Profins Limited was formed in 1978 to provide the international petrochemical and power generation industries with high quality helically-wound finned heat exchanger tubing used in the maintenance and manufacture of air-cooled heat exchangers, condensers and air heaters.

Since inception our plant capacity has steadily increased to a level where output in excess of 35,000 metres per week can be regularly produced in a range of material and size configurations.

In 1984 Profins began stocking high quality heat exchanger tubes in a range of specifications, sizes and materials. We now hold in excess of 1,000 tonnes at any one time in lengths of up to 15 metres. Utilising this material we can provide our clients with tubular products on an ex stock basis ensuring that plant downtime is kept to a minimum.

Over the last 10 years Profins have introduced a tube bending facility for the manufacture of U Tubes for heat exchanger bundles. In addition we have invested heavily in our finning capacity by upgrading to two of the latest McElroy Machines and extended our product range to include a Düma extruded finning machine with an output of 2000 metres per week. We are now one of the largest suppliers of heat exchanger tubes in Europe and this can be directly attributed to the quality of our products and competitive pricing structure. With a strong and stable management team that has been together for 15 years, self-financed growth and a healthy balance sheet, Profins is well poised for future expansion.

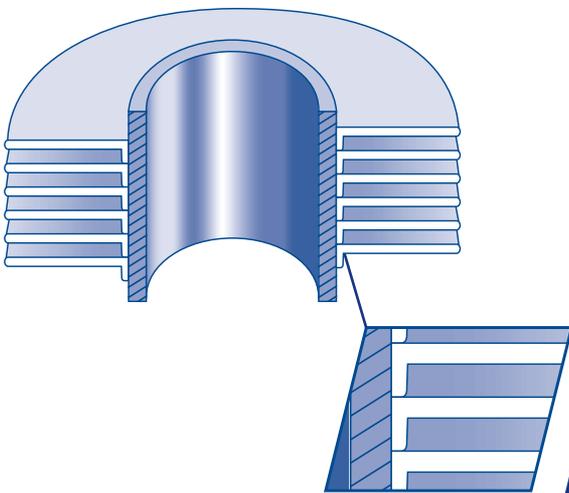
Profins operates worldwide either directly or through locally-appointed agents. The international nature of our client base means we are well versed in all aspects of export logistics ensuring that deliveries are made in the quickest time possible.

FINNED TUBES

Profins is the largest manufacturer of helical high fin tube in the United Kingdom with the facility to produce in excess of 10,000 metres of finned tube per week.

Our ability to draw base tube from our stock of over 1,000 tonnes allows us to react quickly to clients' demands and to remain competitive with any other producer worldwide. Profins' finning facility enables numerous fin and tube material and size combinations to be manufactured. This gives us unrivalled flexibility and allows us to react swiftly to emergency orders.

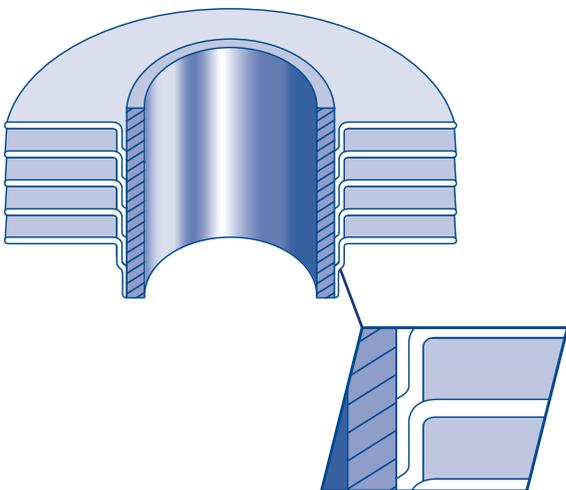
'L' FINNED TUBE



The strip material is subjected to controlled deformation under tension giving the optimum contact pressure of the foot of the fin onto the base tube thus maximising the heat transfer properties. The foot of the fin considerably enhances the corrosion protection of the base tube.

MAXIMUM WORKING TEMPERATURE	150°C
ATMOSPHERIC CORROSION RESISTANCE	ACCEPTABLE
MECHANICAL RESISTANCE	POOR
FIN MATERIALS	ALUMINIUM, COPPER
TUBE MATERIALS	ANY THEORETICAL LIMIT

'LL' FINNED TUBE

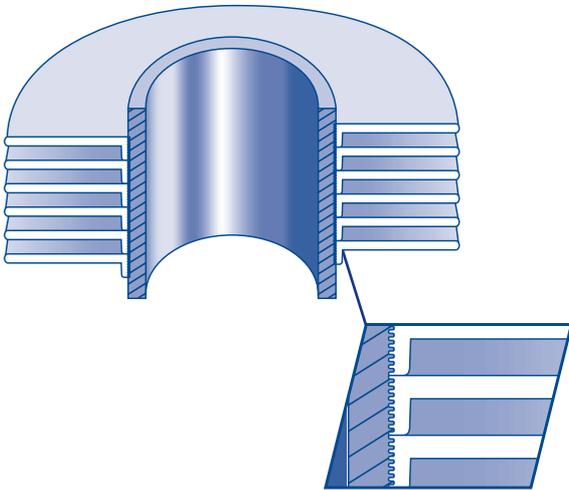


Manufactured in the same way as the 'L' fin type except that the fin foot is overlapped to completely enclose the base tube thereby giving excellent corrosion resistance. This type of tube is often used as an alternative to the more expensive extruded type fin in corrosive environments.

MAXIMUM WORKING TEMPERATURE	180°C
ATMOSPHERIC CORROSION RESISTANCE	ACCEPTABLE
MECHANICAL RESISTANCE	POOR
FIN MATERIALS	ALUMINIUM, COPPER
TUBE MATERIALS	ANY THEORETICAL LIMIT



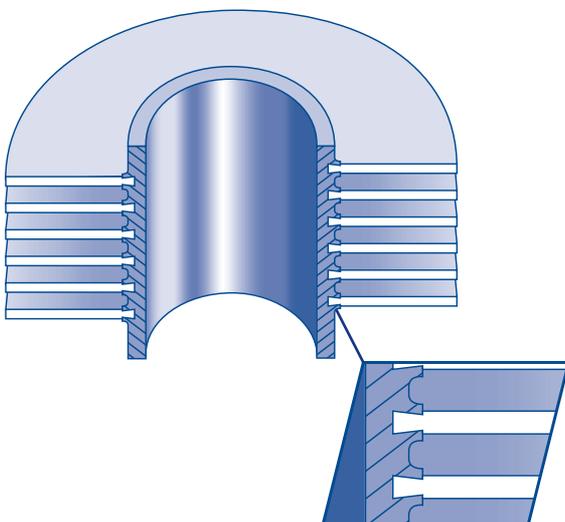
'KL' FINNED TUBE



Manufactured exactly as the 'L' fin except that the base tube is knurled before application of the fin foot. After application, the fin foot is knurled into the corresponding knurling on the base tube thereby enhancing the bond between the fin and tube, resulting in improved heat transfer characteristics.

MAXIMUM WORKING TEMPERATURE	260°C
ATMOSPHERIC CORROSION RESISTANCE	ACCEPTABLE
MECHANICAL RESISTANCE	ACCEPTABLE
FIN MATERIALS	ALUMINIUM, COPPER
TUBE MATERIALS	ANY THEORETICAL LIMIT

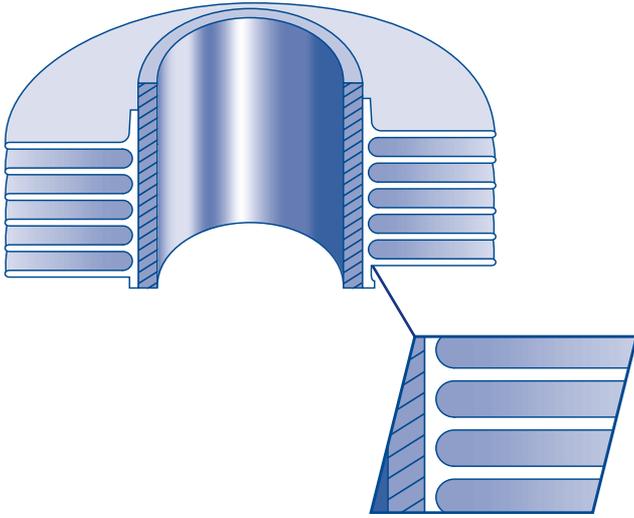
'G' EMBEDDED FINNED TUBE



The fin strip is wound into a machined groove and securely locked into place by back filling with base tube material. This ensures that maximum heat transfer is maintained at high tube metal temperatures.

MAXIMUM WORKING TEMPERATURE	450°C
ATMOSPHERIC CORROSION RESISTANCE	POOR
MECHANICAL RESISTANCE	ACCEPTABLE
FIN MATERIALS	ALUMINIUM, COPPER, CARBON STEEL
TUBE MATERIALS	ANY THEORETICAL LIMIT

EXTRUDED FINNED TUBE



This fin type is formed from a bi-metallic tube consisting of an aluminium outer tube and an inner tube of almost any material. The fin is formed by rolling material from the outside of the exterior tube to give an integral fin with excellent heat transfer properties and longevity. Extruded fin offers excellent corrosion protection of the base tube.

MAXIMUM WORKING TEMPERATURE	285°C
ATMOSPHERIC CORROSION RESISTANCE	EXCELLENT
MECHANICAL RESISTANCE	EXCELLENT
FIN MATERIALS	ALUMINIUM
TUBE MATERIALS	NO THEORETICAL LIMIT



MANUFACTURING CAPABILITIES

Profins utilise 2 different types of finning equipment whose capabilities are as follows:

HELICAL WOUND McELROY FINNING EQUIPMENT

BASE TUBE O/D:	FROM 5/8" (15.88MM) TO 2" (50.8MM)
FIN HEIGHT:	FROM 1/4" (6.35MM) TO 3/4" (19.05MM)
FIN PITCH:	FROM 5 FINS PER INCH TO 12 FINS PER INCH (196 FINS PER METRE TO 473 FINS PER METRE)
FIN THICKNESS:	0.014" (0.34MM) TO 0.024" (0.60MM)
BASE TUBE MATERIALS:	DEPENDENT ON FIN TYPE
FIN MATERIAL:	DEPENDENT ON FIN TYPE
FIN TYPES:	L, LL, KL, G

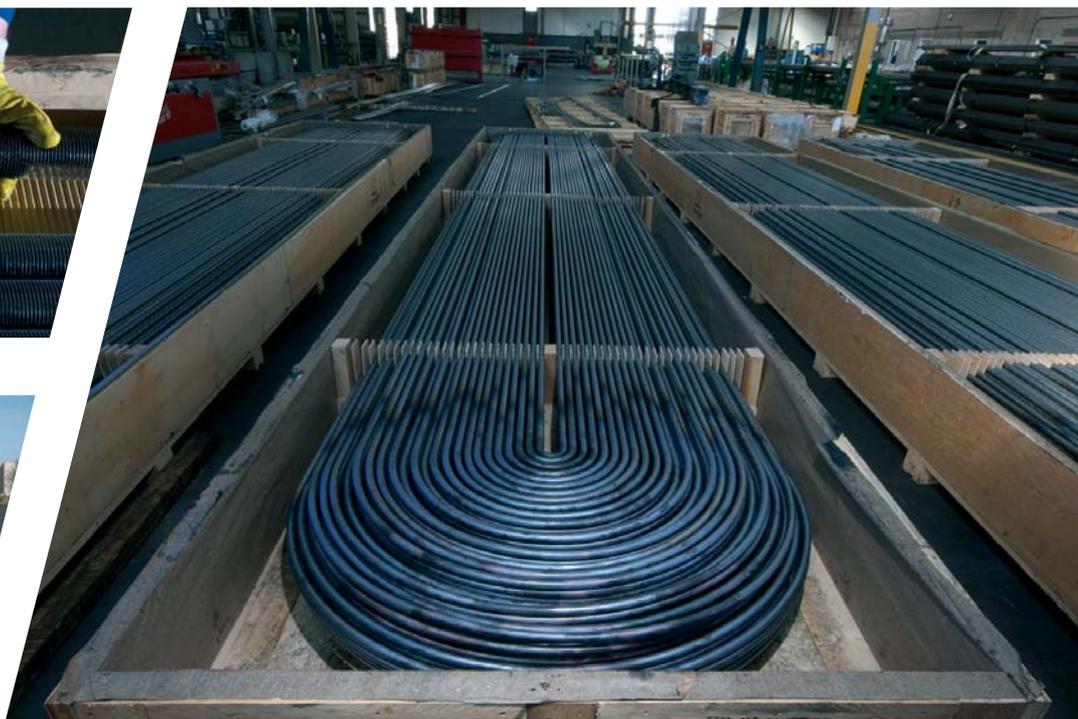
EXTRUDED FINNING EQUIPMENT

BASE TUBE O/D:	FROM 5/8" (15.88MM) TO 1 1/2" (38.1MM)
FIN HEIGHT:	FROM 7/16" (11.10MM) TO 5/8" (15.88MM)
FIN PITCH:	FROM 8 FINS PER INCH TO 11 FINS PER INCH (315 FINS PER METRE TO 433 FINS PER METRE)
FIN THICKNESS:	0.016" (0.4MM) TO 0.02" (0.5MM)
BASE TUBE MATERIALS:	CARBON/STAINLESS STEEL, COPPER BASED ALLOYS. OTHER ALLOYS BY REQUEST
FIN MATERIAL:	ALUMINIUM
FIN TYPES:	EXTRUDED

PACKAGING

Profins can offer a variety of different packing specifications depending on the customers location and requirements.

Whether packed in sturdy wooden boxes for long distance export, finger pallets for U Tubes or bundled to lower cost, we can accommodate all requirements.



U TUBE

Profins' in-house tube manipulation facility enables us to offer rapid turnaround times on all heat exchanger requirements in any material. All tubes are manufactured in accordance with TEMA R specifications. Our competitive prices, rapid quotations and bespoke packing ensure we consistently deliver the highest quality of service.



MATERIALS AVAILABLE

- Carbon Steel
- Austenitic/Ferritic Stainless
- Duplex/Super Duplex
- All Nickel Alloys
- Titanium
- Copper Nickel
- Aluminium Brass

TESTING

All materials are hydro-tested as standard. Stress relieving is carried out in a gas-fired furnace or solution annealed using an induction heat process. We can offer a range of additional testing on request, including dye penetrant and PMI testing.



PACKING

Profins packs all U Tube bundles in bespoke wooden boxes and separate all U Tubes of different radii using finger pallets to facilitate easy assembly of bundles on receipt.



PLAIN TUBE

PLAIN HEAT EXCHANGER TUBES

We stock approximately 1000 tonnes of high quality certified heat exchanger tube in numerous sizes and materials which can be packed and shipped to any destination worldwide.

STOCK TUBE

Profins' export experience, location and flexibility ensures fast and efficient execution of all stock inventories.

SPECIAL ALLOYS

Profins are able to supply a wide range of corrosion-resistant alloys to suit emergency and planned maintenance requirements. Tubes can be supplied in welded, welded and cold-reduced or seamless form. Materials include, but are not limited to, 31803 Duplex, 904L, Nickel 200, 201, C276, Alloy 400/600/800 series, Titanium Grade 2/12 and others.

STOCK SIZES		SPECIFICATION TO ASTM												STOCK SIZES		
Tube O/D	Wall	A179	A334 GR6	A199 T11	A213 T5	A213 TP304L	A213 TP316L	A213 TP321	A789 S31803	A214	A249 TP304L	A249 TP316L	B111 443	B111 687	Tube O/D	Wall
3/8"	16BWG							*							9.525mm	1.65mm
1/2"	16BWG	*													12.7mm	1.65mm
5/8"	16SWG											*	*		15.88mm	1.63mm
	16BWG	*													15.88mm	1.65mm
	14BWG	*													15.88mm	2.11mm
3/4"													*		16.00mm	1.00mm
	18BWG														19.05mm	1.22mm
	16BWG	*				*	*	*	*		*	*	*	*	19.05mm	1.65mm
	14BWG	*	*	*	*					*					19.05mm	2.11mm
	12BWG	*													19.05mm	2.77mm
10BWG	*													19.05mm	3.40mm	
7/8"	14BWG	*												22.22mm	2.11mm	
1"	16SWG											*			25.40mm	1.63mm
	16BWG					*	*	*	*			*			25.40mm	1.65mm
	14BWG	*							*	*	*	*			25.40mm	2.11mm
	13BWG	*								*					25.40mm	2.41mm
	12BWG	*			*					*					25.40mm	2.77mm
	11BWG	*								*					25.40mm	3.05mm
10BWG	*													25.40mm	3.40mm	
1 1/4"	10BWG	*												31.75mm	3.40mm	
1 1/2"	10BWG	*												38.10mm	3.40mm	

OTHER PRODUCTS

Profins provides a range of other products for a wide range of applications including; heat recovery systems, boilers, gas turbines and furnaces for the refining and petrochemical industries.

We have vast experience in supplying to engineering consultants, end users and other refurbishment companies. We work closely with customers to understand their specific material requirements and other demands. Effective procurement solutions of materials reduces lead times and a variety of testing is available to ensure a high quality product is delivered.

WELDED FINNED TUBES

Profins can supply either solid or serrated welded finned tubes. These tubes are manufactured specifically to suit the high temperature environment found in furnaces/boilers and waste heat recovery equipment.

Our high frequency serrated fin is a metal strip that has been serrated or cut and then helically wound around the specified tube. The fin is welded to the tubular base using the high frequency weld process.

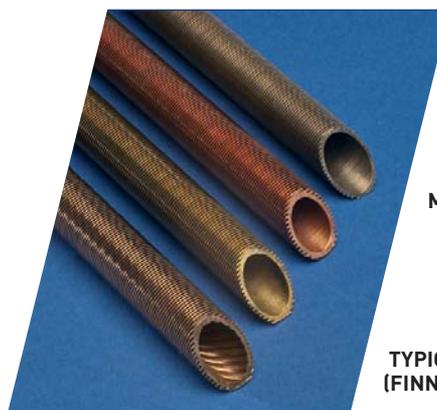
The fin can be applied to a wide variety of tubular material with configurations to suit your requirements.



TUBE SIZES:	3/4" O.D. TO 8" NPS (8.625" O.D.)
FIN HEIGHTS:	3/8" TO 1 1/2"
FIN THICKNESSES:	20 GA. (.035") TO 12 GA. (.102") SEGMENTED WIDTH: 4.5MM OR 8MM
SEGMENTED WIDTH	4.5MM OR 8MM
FIN PITCH:	1 TO 7 FINS PER INCH
MATERIAL:	ANY MATERIAL OR COMBINATION THAT CAN BE RESISTANCE OR ARC WELDED.

INTEGRAL LOW FIN TUBES

Integral low fin tube has the advantage that it can improve the thermal performance of a heat exchanger without the necessity for changing shell size, flow arrangement or the repositioning of piping. The external surface of the tube is increased by the formation of "low fins" by direct extrusion from the material of the base tube.



TUBE SIZES AVAILABLE:	TUBE OD: 12.7MM, 15.88MM 19.05MM, 25.04MM TUBE THICKNESS: >=1.25MM TUBE LENGTH: UP TO 12,500MM
FINS/INCH AVAILABLE:	16, 19, 26, 28, 32 & 36 FINS/INCH DEPENDENT ON MATERIAL AND CLIENT REQUIREMENTS.
MATERIALS AVAILABLE:	1) CARBON & LOW ALLOY STEEL 2) STAINLESS STEEL: TYPE 304, 304L, 316, 316L AND 321 PLUS DUPLEX. 3) COPPER BASE ALLOYS: I.E. ALLOY 443, 687, 706, 715 ETC. 4) TITANIUM & HIGH NICKEL ALLOYS
TYPICAL EXTENDED SURFACE RATIOS: (FINNED/OUTSIDE BARE SURFACE):	19.05MM OD WITH 19 FINS/INCH: 270% 25.4MM OD WITH 26 FINS/INCH: 330%

QUALITY MANAGEMENT SYSTEM



At Profins we realise that consistent and reliable delivery of quality products is highly valued by our customers. We understand that quality is not only a responsibility to our clients, but also a benchmark for measuring our own performance and capabilities. We are dedicated to continuously improving and refining all of our business processes so that our products are of the highest standard. As a result Profins is an ISO 9001 company. From personally auditing all new suppliers, to carefully looking at every step of the production process we are fully committed to delivering quality every time.



WORLDWIDE COVERAGE

Profins deals with clients worldwide either directly or through its network of local agents. If you are unaware of your local representative, please call and we will be pleased to supply contact details. We supply operators of major plants worldwide and maintenance contractors and specialists who are involved in the repair, manufacture or modification of heat exchangers of all types.

