



3S HEAT EXCHANGERS



COMPANY PROFILE

3S S.r.l. was established in 1973.

Since from its origin the Company was oriented to the design and production of equipment components which are widely used in all thermal heat exchange industrial applications, through the construction and supply of heat exchangers tested in accordance with the different international standard regulations.

3S Srl has more than fifty years of experience on the market. Our experience is characterized by a continuous technical improvement in terms of design and equipment construction, supported by appropriated business decisions, that have allowed us to follow the development of the European and international markets through the use of innovative technologies for the production of all our components.

Our company has several production units for a total area of 12000 sqm where more than over 60 persons work.

The finned block heat exchangers are designed and built in Trezzano Rosa.

In this site are also located our Administrative and Executive offices including the Technical department.

Another unit is based in Cambiago where a warehouse for raw materials storage is located and where the Production Department performs the assembling and manufacturing of heat exchangers with spiral fins tubes or smooth pipes and other special constructions.



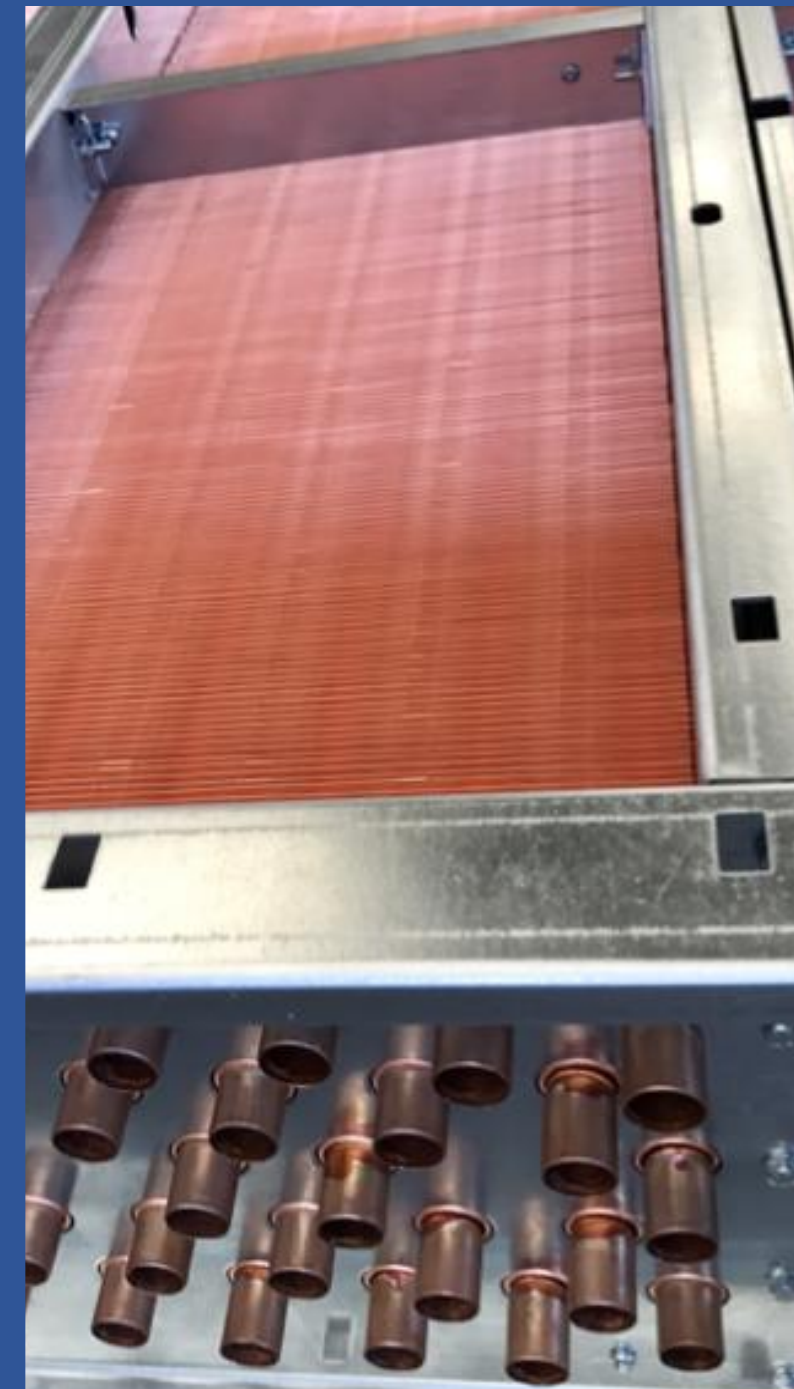
APPLICATIONS

- HVAC
- Heat recovery from hexhaust gases
- Heat pumps
- Gas turbine air intake coils
- Marine-and-Offshore
- Fiilter protection
- Textile-plants
- Oil cooler
- Paper industry
- Clean room
- Refrigeration
- Industrial proceases
- Liquid coolers and Condensers
- Special applications
- Energy recovery system



FINs BLOCK COILS (Materials)

- Copper/Aluminium
- Copper/Copper
- Copper/Pre-painted Aluminium
- Copper/Al-Mg2,5
- Cupronickel/Copper
- Tinned Copper / Tinned Copper
- Copper/ Tinned Copper
- Aisi304L/Aisi304L
- Aisi304L/Aluminium
- Aisi304L/Pre-painted Aluminium
- Aisi304L/Copper
- Aisi316L/Aisi316L
- Aisi316L/Aluminium
- Aisi316L/Pre-painted Aluminium
- Aisi316L/Copper
- Titanium/Copper
- Titanium/Aisi316L
- Fe/Al
- Fe/Fe



SPIRAL FINS COILS (Materials)

- Copper/Aluminium
- Copper/Copper
- Cupronickel/Copper
- Copper/ Copper Sn
- Aisi304L/Aisi304L
- Aisi304L/Aluminium
- Aisi304L/Copper
- Aisi316L/Aisi316L
- Aisi316L/Aluminium
- Aisi316L/Copper
- Aisi316 Ti
- Saf
- Sanicro
- Titanium/Copper
- Titanium/Aisi316L
- Fe/Al
- Fe/Fe
- Pre-galvanized Fe
- Fe/Fe hot dip galvanized



BARE TUBE COILS (Materials)

- Copper
- Cupronickel
- Stainless Steel 304L
- Stainless Steel 316L
- Titanium
- Carbon Steel
- Carbon Steel hot dip galvanized



COILS SELECTION SOFTWARE

3S Saldature Speciali Segrate S.r.l.
Via Bari, 8 - Trezzano Rosa (MI) Italy
tel. (+39)02 9098 1369 - (+39)02 9506 7167
fax (+39)02 9098 1374 - (+39)02 9506 7398
e-mail : info@3stc.it - www.3stc.it

OFFER n. 2685/2018 Rev. 0
Date: 24/07/2018
Selection 23270 [MF5 0S 47x 600M (05.18v)]
Customer : ABC INDUSTRY
Ref. : Mr.Thomson

FIN SIDE

		Fluid: AIR			
Quantity	m3/s	11.11	Dry air	kg/s	13.78
Specific gravity	kg/m3	1.240			
Inlet	Dry bulb temp.	°C	30.0	Relative humid.	%
	Wet bulb temp.	°C	22.0	Enthalpy	kJ/kg
	Absolute humid.	g/kg	13.29		
Outlet	Dry bulb temp.	°C	18.0	Relative humid.	%
	Wet bulb temp.	°C	15.3	Enthalpy	kJ/kg
	Absolute humid.	g/kg	10.6		
Face velocity	m/sec	1.97	Pressure drop	Pa	124
Condensed water	kg/s	0.0372	Sensible heat ratio		0.68
Capacity	kW	292.89			

TUBE SIDE

		Fluid: WATER			
Quantity	l/s	13.99			
Inlet temp.	°C	7.0	Outlet temp.	°C	12.0
Velocity	m/s	1.54	Pressure drop	kPa	39.8

COIL TYPE P40-16 AR 4R - 47T - 3000A - 2,5Pa Cu/Al

COIL CHARACTERISTIC I3S Re30h-A.I3S-90 -3,31-A0

Surface	m2	557.9	- Est.td empty weight	kg	290	- Fluid content	dm3	135.2
Finned length	mm	3000	- Finned height	mm	1880			

PED 2014/68/EU directive - Art. 4.3
Design pressure and temperature (inside tubes) 10,0 bar / 110,0°C

MATERIALS

Exchange tube	Copper	- Diameter	mm	16,50	- Thickness	mm	0,40
Fins	Aluminium	- Thickness	mm	0,12			
Headers	Copper	- Frame	Stainless steel A304L	- Connections	Flanged		
Flanges	Aisi 304 EN 1092-1 Type 13 - PN16 (ex UNI 2254)						

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OFFER n. 2255/2018 Rev. 0
Date: 03/01/2018
Selection 22634 [MF5 0S 33x 600M (05.17v)]
Customer : ABC INDUSTRY
Ref. : Mr.Thomson

FIN SIDE

		Fluid: AIR			
Quantity	m3/h	40000	Dry air	kg/h	49600
Specific gravity	kg/m3	1.240			
Inlet	Dry bulb temp.	°C	48.0	Relative humid.	%
	Wet bulb temp.	°C	28.8	Enthalpy	kJ/kg
	Absolute humid.	g/kg	17.20		
Outlet	Dry bulb temp.	°C	12.8	Relative humid.	%
	Wet bulb temp.	°C	12.8	Enthalpy	kJ/kg
	Absolute humid.	g/kg	9.1		
Face velocity	m/sec	2.54	Pressure drop	Pa	497
Condensed water	kg/s	0.1119	Sensible heat ratio		0.64
Capacity	kW	777.36			

TUBE SIDE

		Fluid: WATER			
Quantity	l/h	33428			
Inlet temp.	°C	6.0	Outlet temp.	°C	26.0
Velocity	m/s	1.49	Pressure drop	kPa	115.8

COIL TYPE P40-16 AR 11R - 42T - 2600A - 2,1Pa Cu/Al nc = 33

COIL CHARACTERISTIC I3S Re30g (Tr0)-E0 -10,72-A0

Surface	m2	1402.8	- Est.td empty weight	kg	919	- Fluid content	dm3	255.4
Finned length	mm	2600	- Finned height	mm	1680			

Heat exchanger exempt from testing in conformity to PED 2014/68/EU directive - Art. 4.3
Design pressure and temperature (inside tubes) 10,0 bar / 110,0°C

MATERIALS

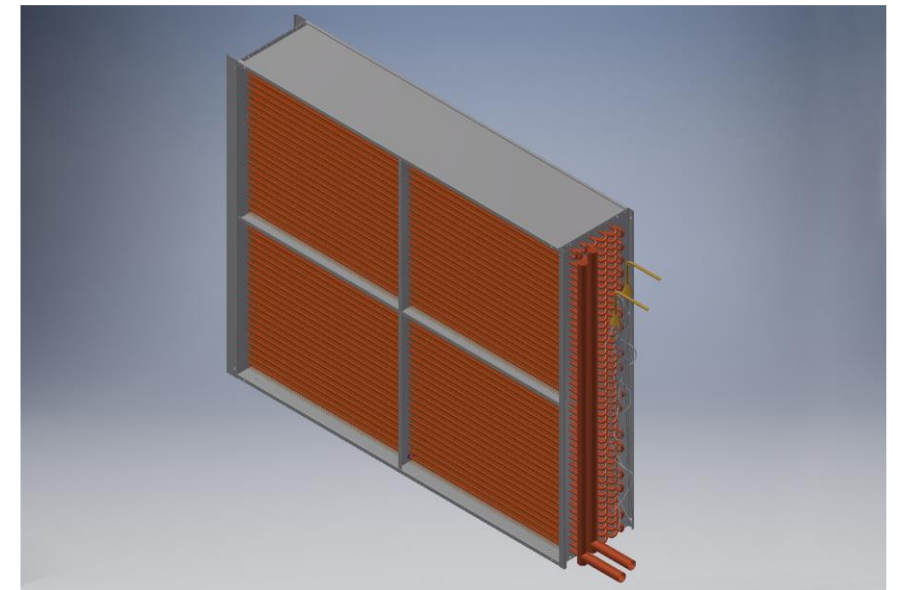
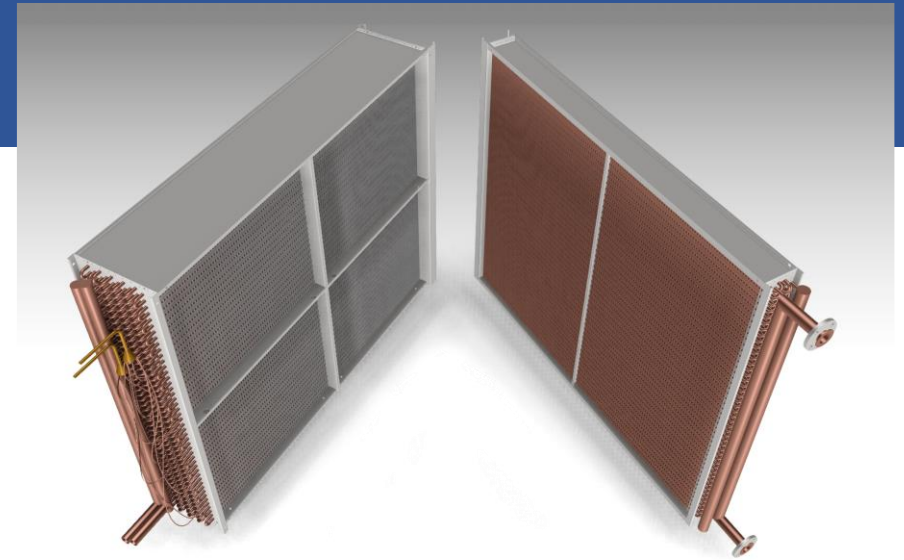
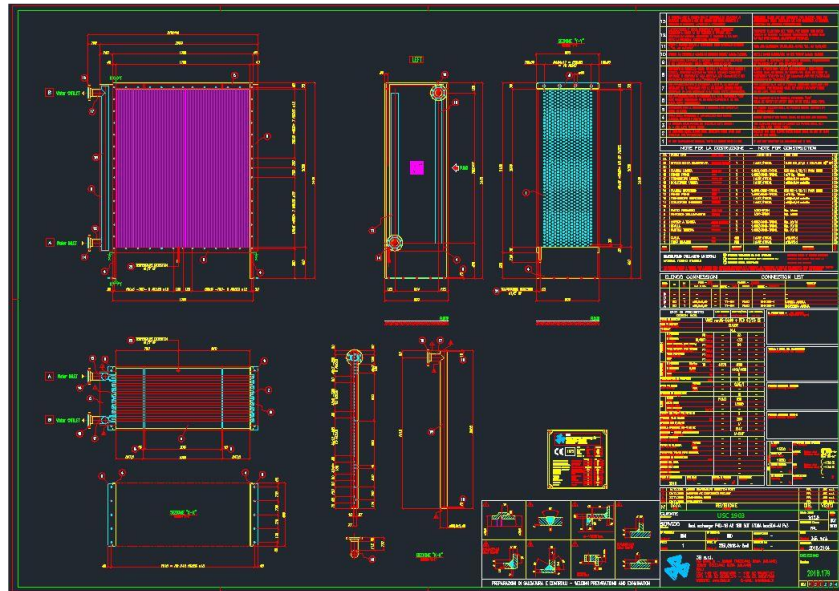
Exchange tube	Copper	- Diameter	mm	16,50	- Thickness	mm	0,50
Fins	Aluminium	- Thickness	mm	0,23			
Headers	Copper	- Frame	Stainless steel A316L	- Connections	Threaded EN 10226-2		

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PROJECT AND CONSTRUCTION

Our Technical Department work with modern drawing technology systems CAD 2D and 3D Modeling.

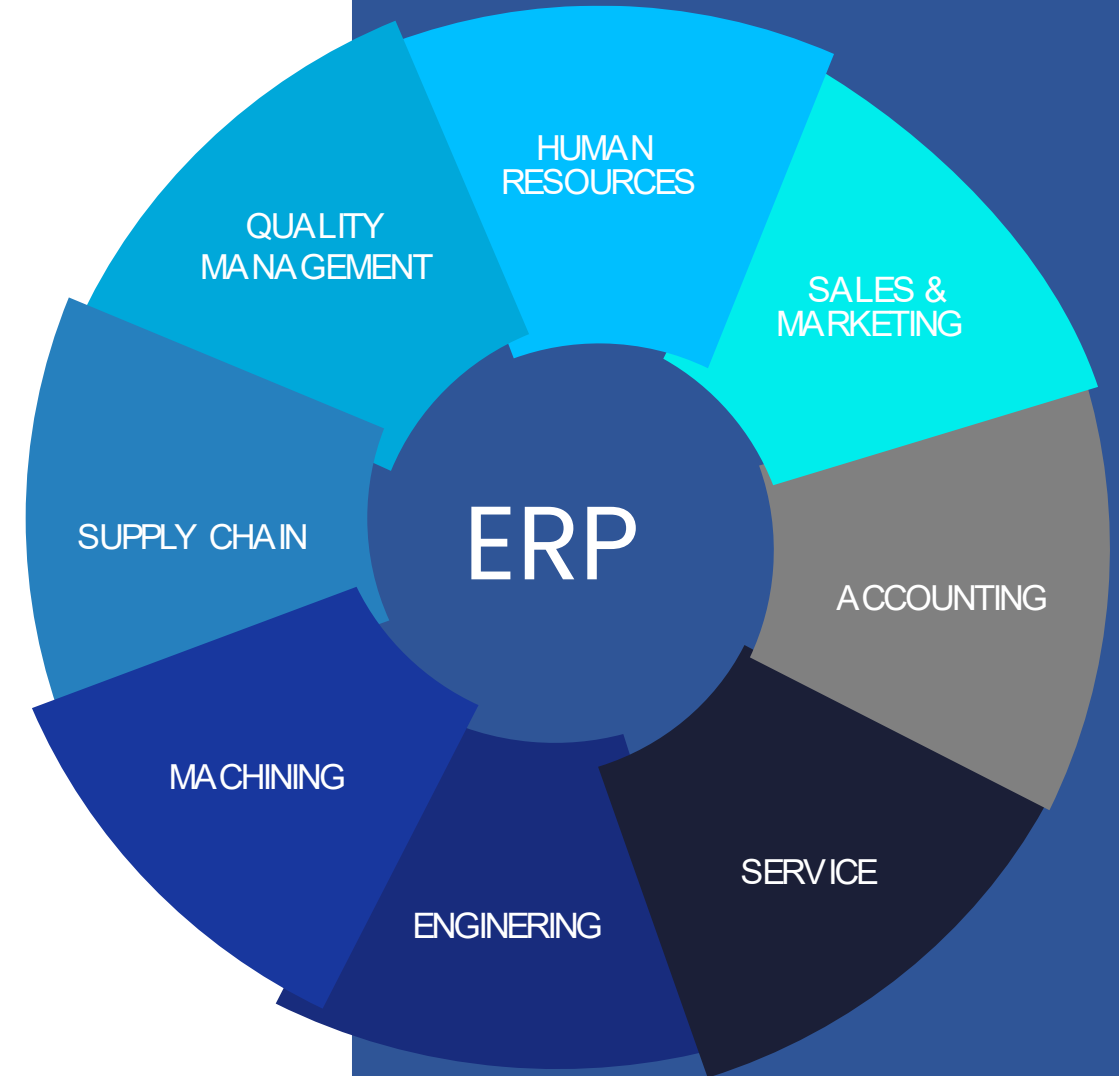
These systems permit to us to obtain all the necessary information to program our CNC equipment: Finnpress, Tube bender and Headers drilling machine.



MANUFACTURING CONTROL

Using the **ERP software**, we are able to check just in time our productive process, including the workload and possible critical situations. This allows us to avoid any delays, so resulting in our customers' satisfaction.

We are also able to offer precise and prompt information about manufacturing progress and delivery status.



TECHNICAL CERTIFICATION

PED 2014/68/UE

We can design and build CE marked pressure vessels and piping in every Class (from I to IV) and Module (A, A1, B+F, G).

Our brazing processes are qualified according to the EN 13134 normative. Our operators are qualified according to the EN13133 normative. Our welding processes for iron, copper nickel and stainless steel are qualified according to the EN 288, EN 15614-6, EN 15613 normative or according to the ASME Code Section IX. Our welders are qualified according to the EN 287-1, EN 9606-3, and EN 287-1 normative or according to e ASME Code Section IX.

DIRETTIVA 2014/68/UE

Fluido / Gas: **Vapore**

Temp. vapore: **150** °C Press. eserc.: **5** barg

Press. progetto: **10** barg

Materiale Coll.: **Fe**

Diam. Collett.: **2"** Diam. Coll. mm: **60**

DN Collettore: **50** Spess. Coll. mm: **3.2**

Lungh. Collett.: **1600** mm Volume Coll.: **3.95** dm3

Geom. P40: **P40** N.R.: **4** N.T.: **20** Lungh. mm: **2000**

Spess. tubi mm: **1.5** Volume Batt. dm3: **31.9**

Attrezzature in pressione a focalore

Classificazione Fluido: **NON Pericoloso** Gruppo: **2** Tensione vapore barg: **> 0.5**

Volume collettore: **3.95** x Barg **10** = **39.50**

Tabella 2 Cat. PED: **Art. 4.(3)**

Vol. batt. dm3: **31.9** x Barg **10** = **319.0**

Tabella 2 Cat. PED: **Cat. II**

DN Collettore: **50** x Barg **10** = **500.0**

Tabella 7 Cat. PED: **Art. 4.(3)**

Verifica **Documenti**

Stampa **Exit**

Tabella 2 Gr. 2 - > 0.5

Categoria	Ps x V
Art. 4 Par. 3	<= 50
Cat. I	>50 - <=200
Cat. II	>200 - <=1000
Cat. III	>1000 - <=3000
Cat. IV	>3000

Tabella 7 Gr. 2 - > 0.5

Categoria	Ps x DN
Art. 4 Par. 3	<= DN 32
Art. 4 Par. 3	<= 1000
Cat. I	>1000 - <=3500
Cat. II	>3500 - <=5000
Cat. III	>5000

QUALITY SYSTEM CERTIFICATION

3S S.r.l. has obtained several years ago the ISO 9001/2000 certification in compliance with all quality standards and operative guidelines required by the international regulations.

This is a translation of certificate N. IT07/0169

The quality management system of

3S Saldature Speciali Segrate S.r.l.

Via Bari, 8 - 20060 Trezzano Rosa (MI) - Italy

has been assessed and certified as meeting the requirements of

ISO 9001 / UNI EN ISO 9001:2015

For the following activities

Design and production of heat exchangers with pressure until 80 Bar and maximum length 14 m, of carbon and stainless steel, copper and copper alloys.

IAF Sector: 17

This certificate is valid from 08/02/2022 until 08/02/2025 and remains valid subject to satisfactory surveillance audits. Re certification audit due before 08/02/2025. Issue 7. Certified since 08/02/2007.

The audit leading to this certificate commenced on 19/01/2022. Previous issue certificate validity date was until 08/02/2022.

Authorized by
Paola Santarelli

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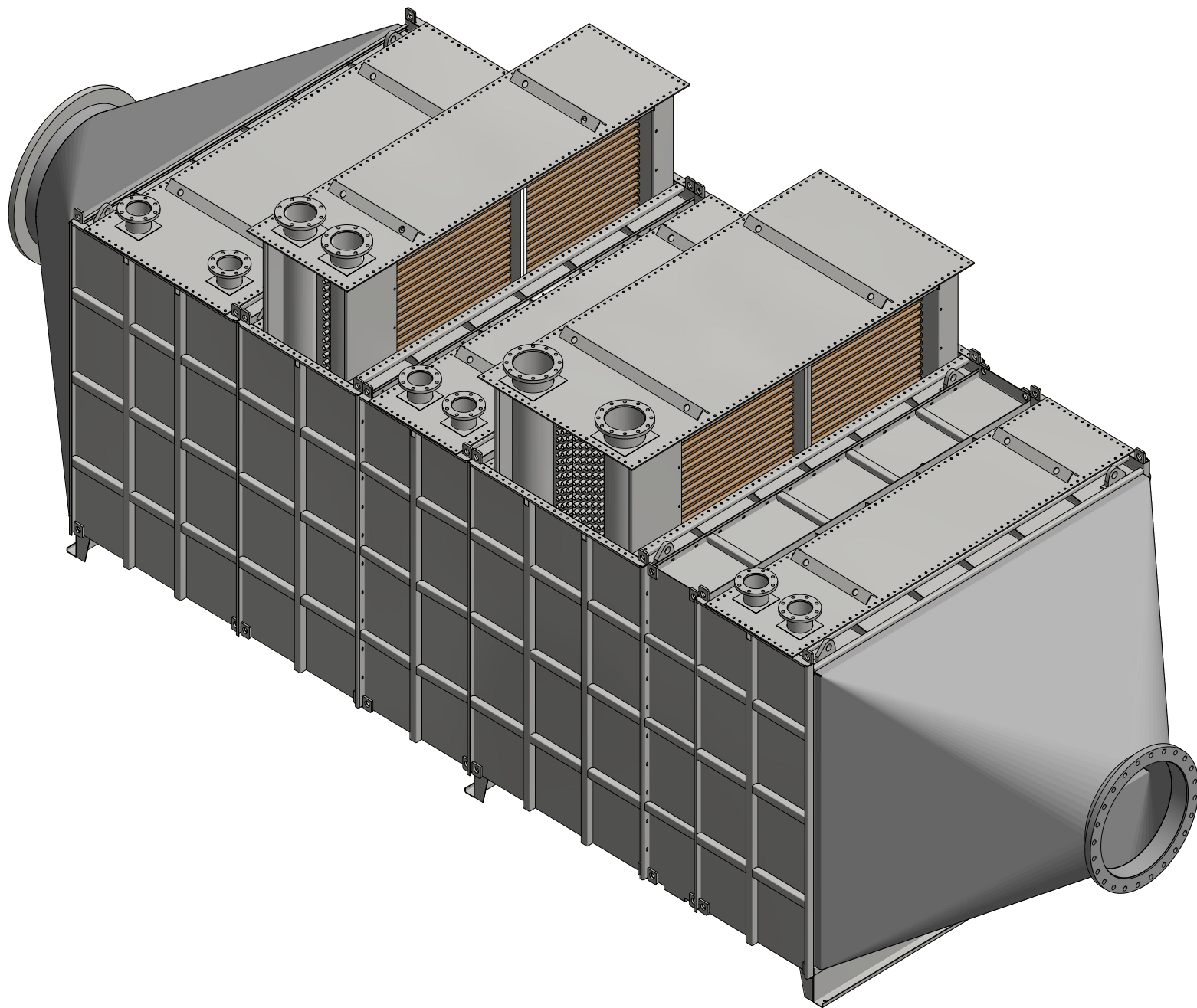
SGS N° 0015 A

Member of IAF, EA, ILAC, UKAS, and other international certification bodies.

Signature of EA, IAF, ILAC, UKAS, and other international certification bodies.

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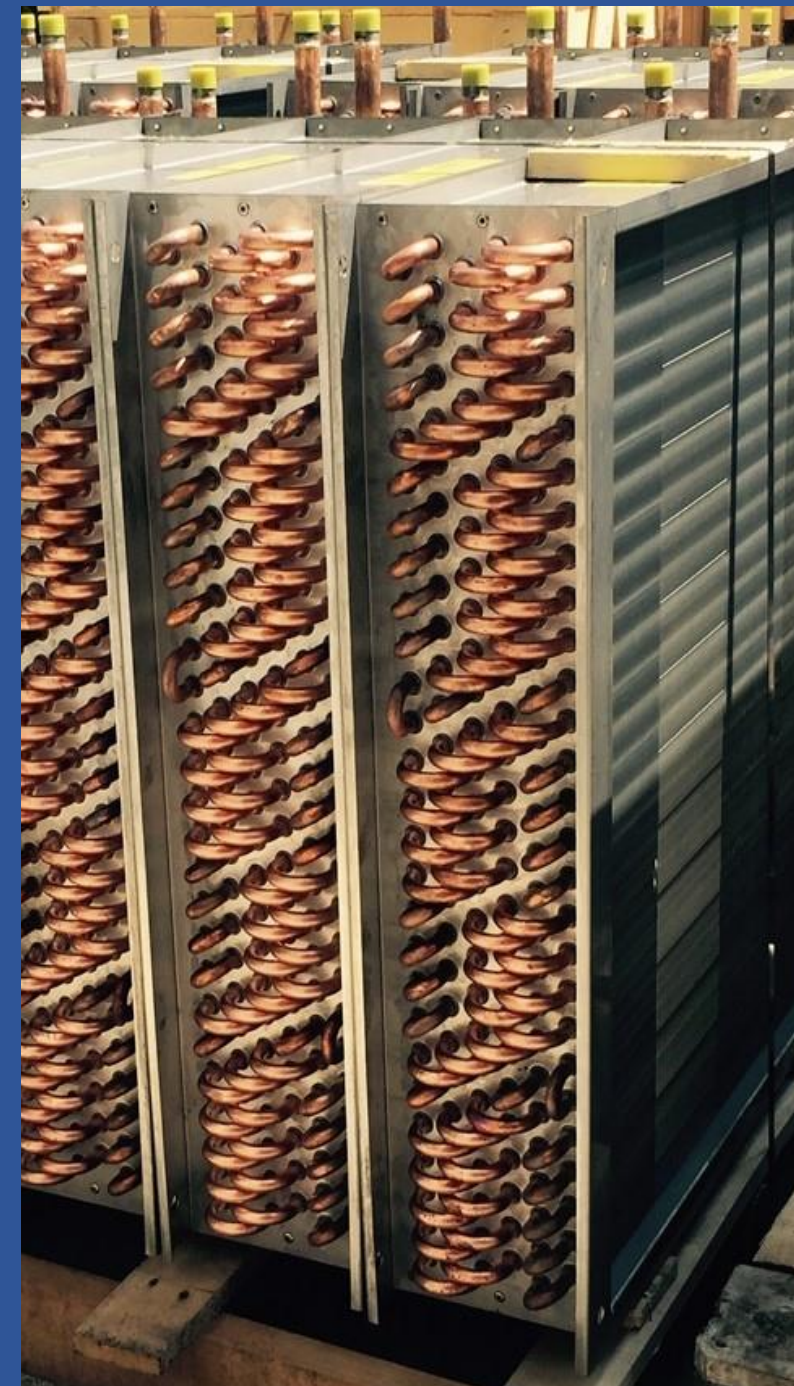
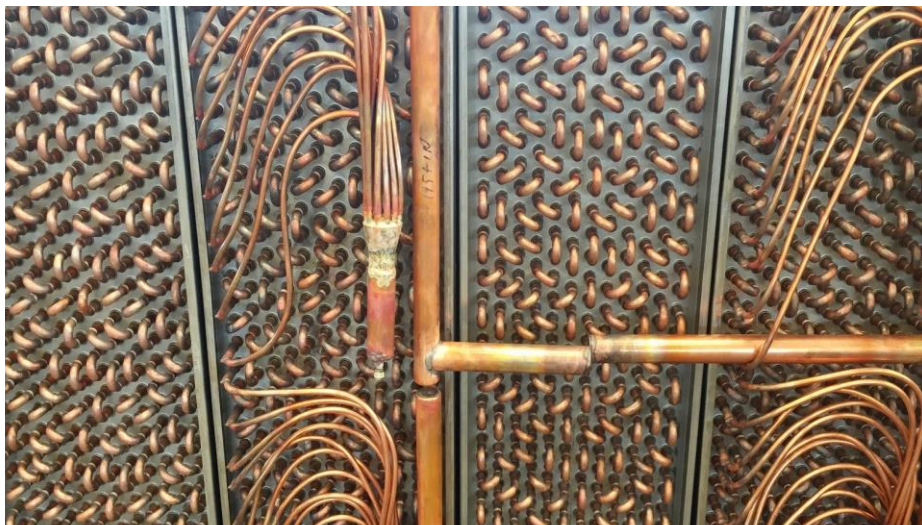


PRODUCT EXAMPLE FIN BLOCK COILS



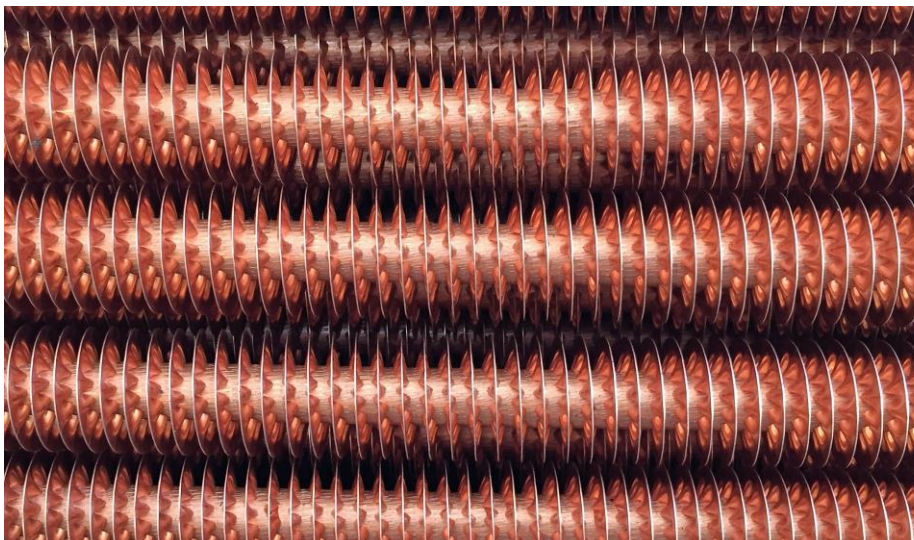
PRODUCT EXAMPLE

FIN BLOCK COILS



PRODUCT EXAMPLE

SPIRALS FIN COILS



PRODUCT EXAMPLE SPIRALS FIN COILS



PRODUCT EXAMPLE

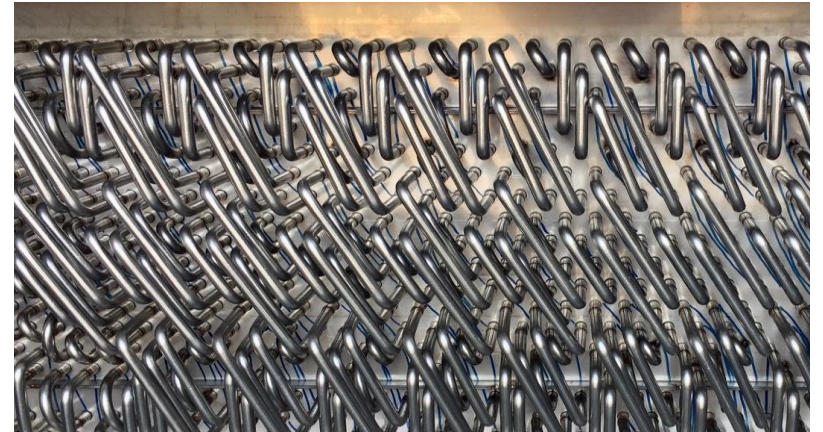
BARE TUBE COILS



PRODUCT EXAMPLE BARE TUBE COILS



SPECIAL CONSTRUCTION



SPECIAL CONSTRUCTION



HEADQUARTERS AND FACTORIES

3S is made up of three production units: the first is based in Cambiago (Milan), where there is the warehouse for the storage of raw materials and the production department. The fining processes of the tubes, the construction and assembly of heat exchange coils with finned tubes, and finally the construction of shell and tube heat exchangers are carried out there.

The second production unit is in Trezzano Rosa (Milan), where the finned block heat exchange coils are designed and built. Our executive and administrative offices and an avant-garde technical design office that works with the most modern technologies and 2D and 3D CAD design-prototyping systems are also located here.

TEL. +39 0290981369

Our offices are at your disposal every day from Monday to Friday from 8.00 a.m to 5.30 p.m

