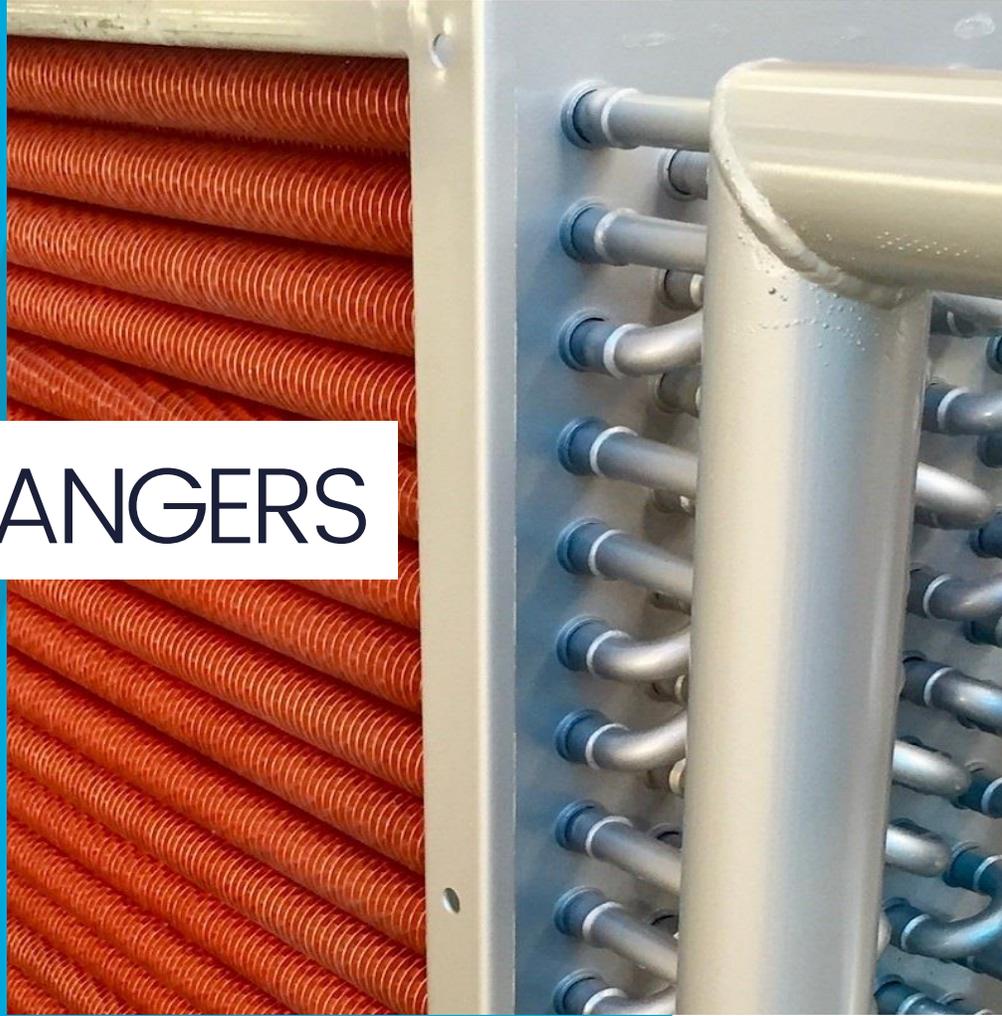




3S HEAT EXCHANGERS



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.



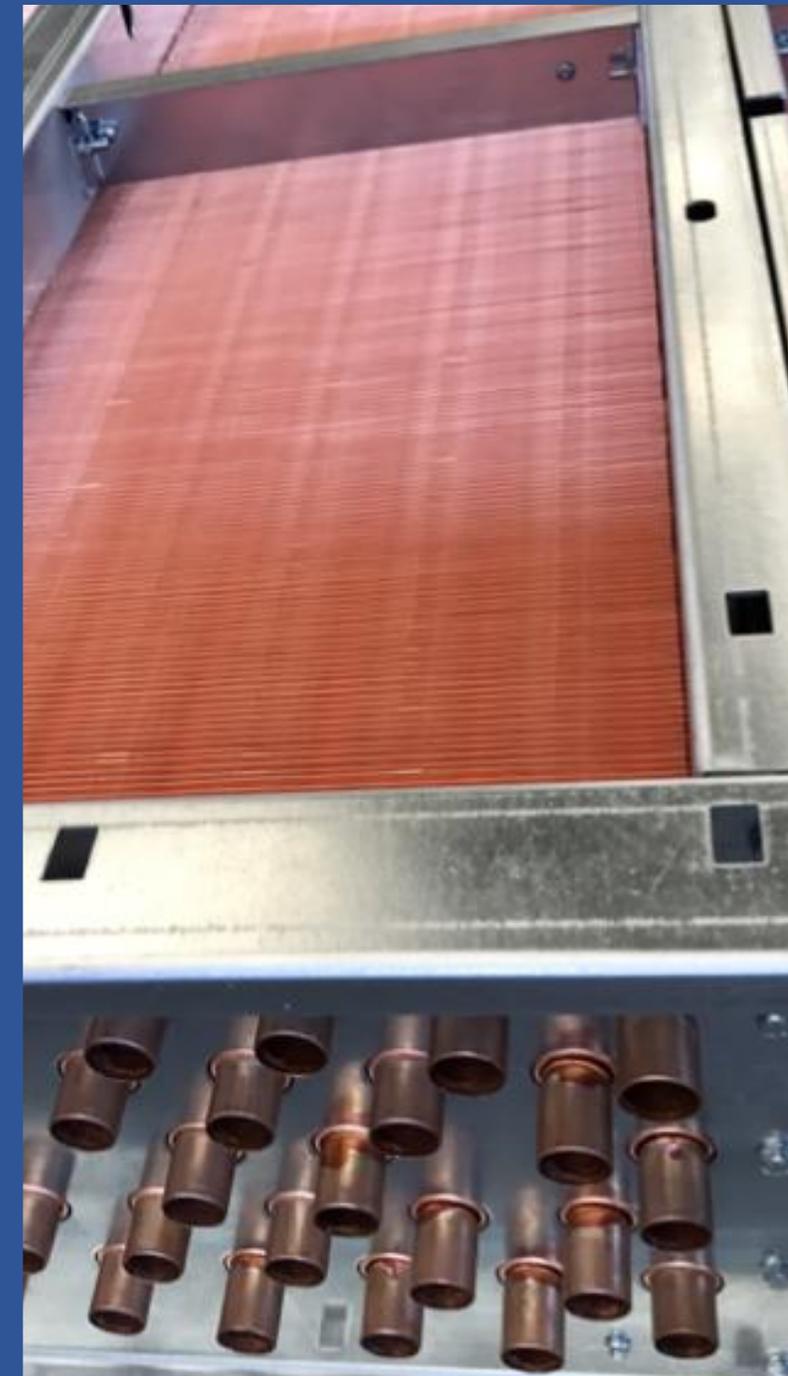
APPLICATIONS

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



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
- Aisi316L/Aisi316L



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





SINCERT
SISTEMI INTEGRATI DI QUALITÀ CERTIFICATA

OFFER n. 2685/2018 Rev. 0
Date: 24/07/2018

Selection 23270 [MF5 0S 47x 600M (05.18v)]

Customer : **ABC INDUSTRY**
Ref. : Mr.Thomson

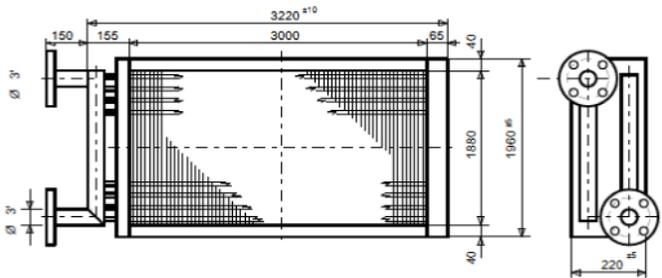
FIN SIDE		Fluid: AIR	
Quantity	m ³ /s	11,11	Dry air
Specific gravity	kg/m ³	1,240	kg/s
Inlet	Driv bulb temp. °C	30,0	Relative humid. %
	Wet bulb temp. °C	22,0	Enthalpy kJ/kg
	Absolute humid. g/kg	13,29	
Outlet	Driv bulb temp. °C	18,0	Relative humid. %
	Wet bulb temp. °C	15,3	Enthalpy kJ/kg
	Absolute humid. g/kg	10,6	42,87
Face velocity	m/sec	1,97	Pressure drop Pa
Condensed water	kg/s	0,0372	Sensible heat ratio
Capacity	kW	292,89	0,68

TUBE SIDE		Fluid: WATER	
Quantity	l/s	13,99	
Inlet temp.	°C	7,0	Outlet temp. °C
Velocity	m/s	1,54	Pressure drop kPa
			12,0
			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	m ²	557,9	- Est.td empty weight kg
			290
			- Fluid content dm ³
			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)		



Sheet 1 / 1

3S Srl - Divis. Techno Coils
Design and manufacture of finned-block and spiral-fins heat exchangers according to the rules VSR - ASME - TEMA - ADMK with I.S.P.E.S.L. - R.I.N.A. - TUV - Testing



3S Saldature Speciali Segrate S.r.l.
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e-mail : info@3stc.it - www.3stc.it





SINCERT
SISTEMI INTEGRATI DI QUALITÀ CERTIFICATA

OFFER n. 2255/2018 Rev. 0
Date: 03/01/2018

Selection 22634 [MF5 0S 33x 600M (05.17v)]

Customer : **ABC INDUSTRY**
Ref. : Mr.Thomson

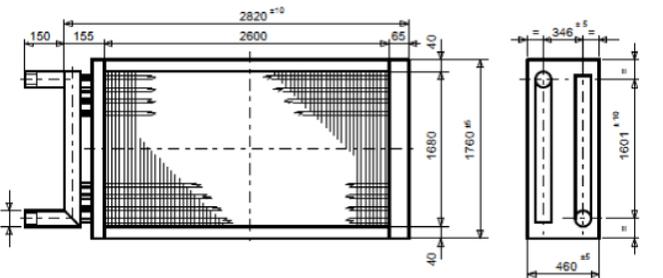
FIN SIDE		Fluid: AIR	
Quantity	m ³ /h	40000	Dry air
Specific gravity	kg/m ³	1,240	kg/h
Inlet	Driv bulb temp. °C	48,0	Relative humid. %
	Wet bulb temp. °C	28,8	Enthalpy kJ/kg
	Absolute humid. g/kg	17,20	92,80
Outlet	Driv bulb temp. °C	12,6	Relative humid. %
	Wet bulb temp. °C	12,6	Enthalpy kJ/kg
	Absolute humid. g/kg	9,1	100
Face velocity	m/sec	2,54	Pressure drop Pa
Condensed water	kg/s	0,1119	Sensible heat ratio
Capacity	kW	777,36	0,64

TUBE SIDE		Fluid: WATER	
Quantity	l/h	33426	
Inlet temp.	°C	6,0	Outlet temp. °C
Velocity	m/s	1,49	Pressure drop kPa
			26,0
			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	m ²	1402,8	- Est.td empty weight kg
			919
			- Fluid content dm ³
			255,4
Finned length	mm	2600	- Finned height mm
			1880

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



Sheet 1 / 1

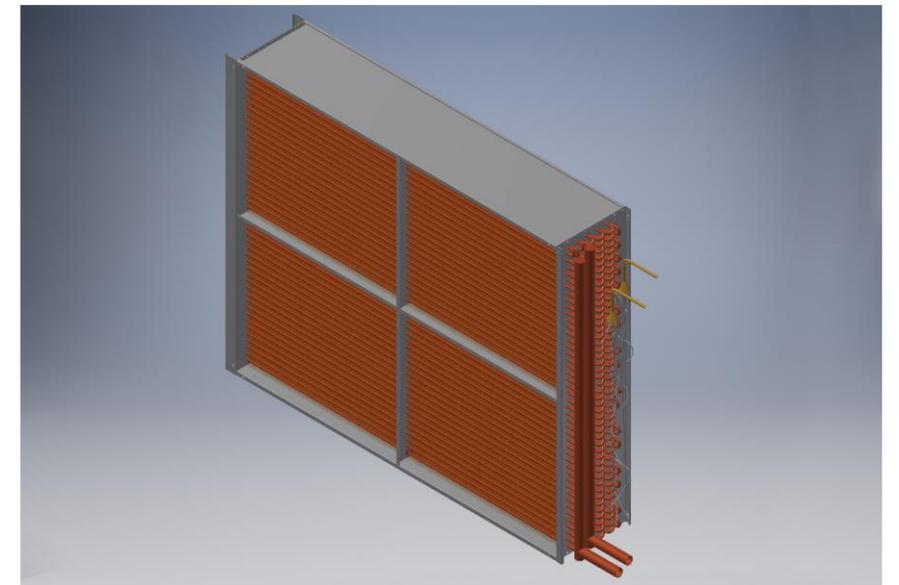
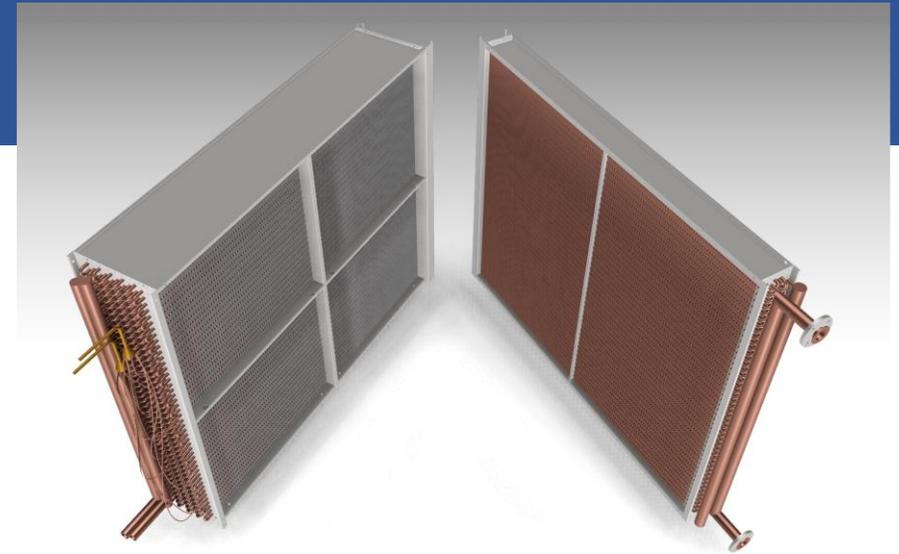
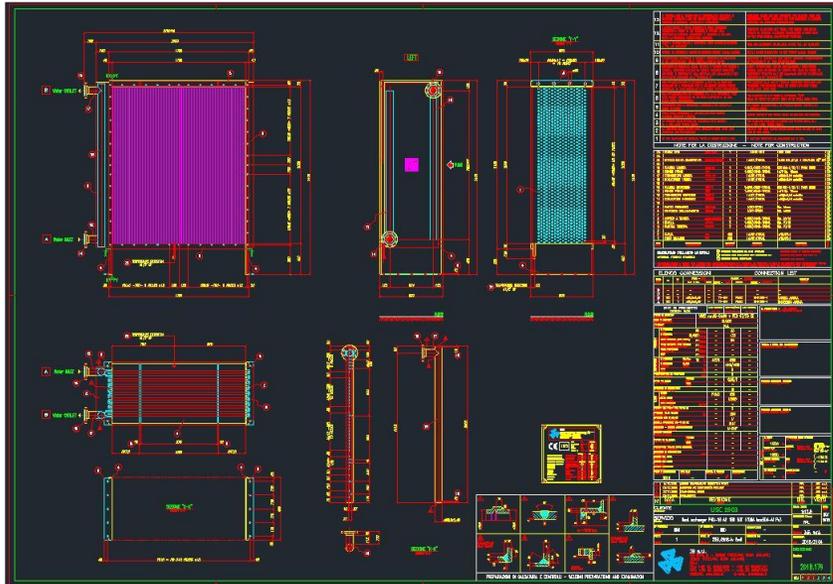
3S Srl - Divis. Techno Coils
Design and manufacture of finned-block and spiral-fins heat exchangers according to the rules VSR - ASME - TEMA - ADMK with I.S.P.E.S.L. - R.I.N.A. - TUV - Testing

3S Saldature Speciali Segrate S.r.l. - Via Bari, 8 - 20060 Trezzano Rosa (Milan) Italy - Tel. +39.0290981369 - P.I. 02979530157 - www.3scoils.it

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. Coll. mm 60

DN Collettore 50 Spess. Coll. mm 3.2

Lungh. Collett. 1600 mm Volume Coll. 3.95 dm3

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

Spess. tubi mm 1.5 Volume Batt. dm3 31.9

Attrezzature in pressione a focolare

Classificazione Fluido NON Pericoloso Gruppo 2 Tensione vapore barg > 0.5

Volume collettore 3.95 x Barg 10 = 39.50

DN Collettore 50 x Barg 10 = 500.0

Vol. batt. dm3 31.9 x Barg 10 = 319.0

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

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

Verifica Documenti

Stampa Exit

Gr. 2 -> 0.5
RECIPIENTI
Categoria Ps x V
Art. 4 Par. 3 <= 50
Cat. I >50 - <=200
Cat. II >200 - <=1000
Cat. III >1000 - <=3000
Cat. IV > 3000

Gr. 2 -> 0.5
TUBAZIONI
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

SGS ITALIA S.p.A.
Via Caldera, 21 - 20153 MILANO - Italy
t +39 02 73 93 1 f +39 02 70 10 94 89 www.sgs.com

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ACCREDIA

SGS

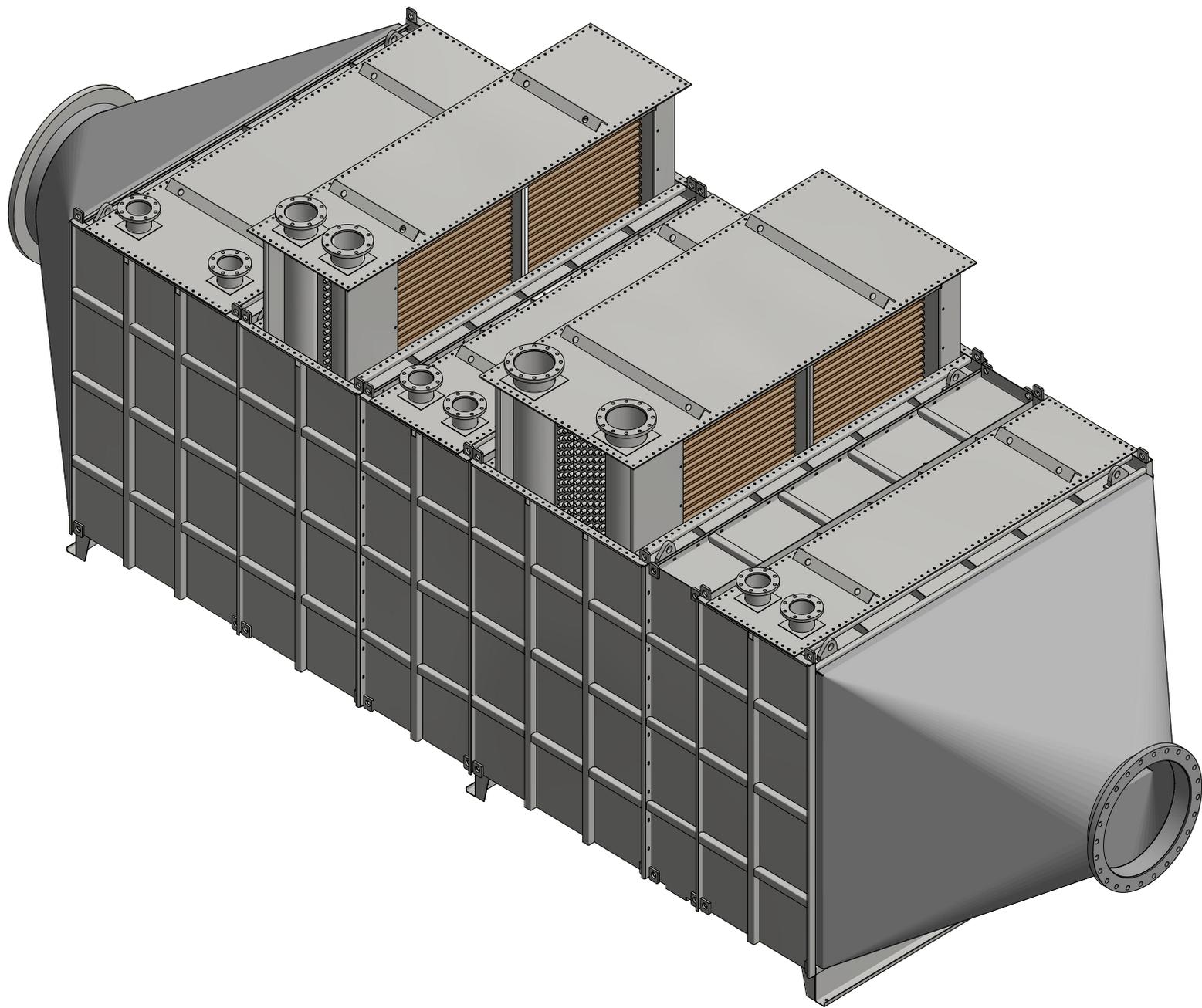
ISO 9001

SGS

Verifica Documenti

Stampa Exit

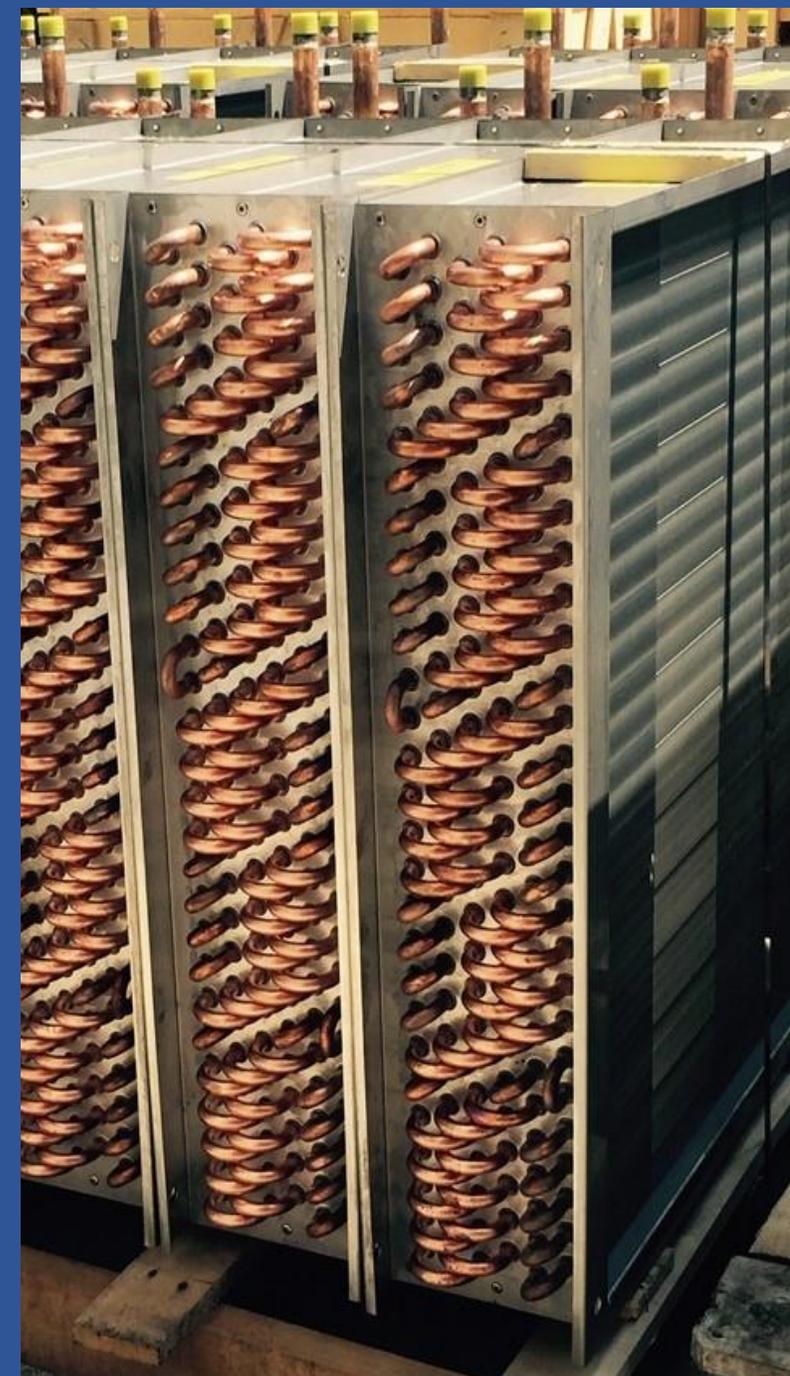
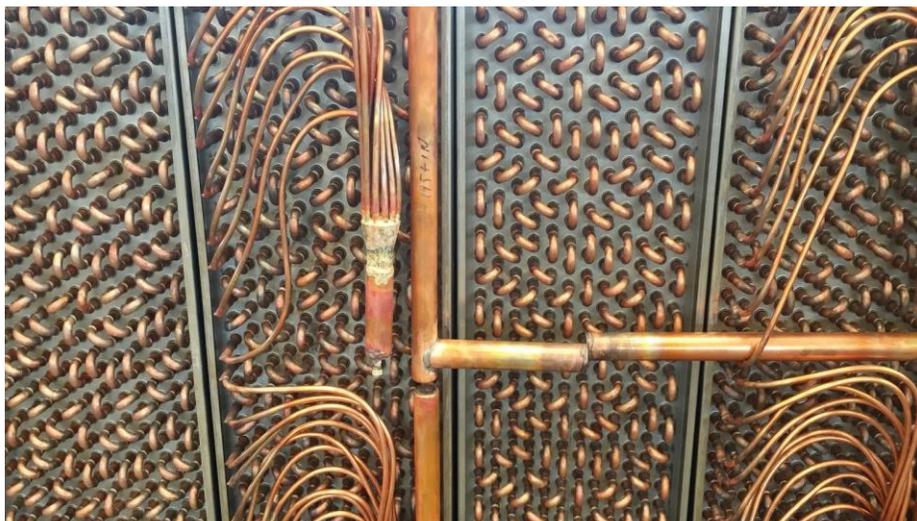
This document is issued by the Company subject to its General Conditions of Certification. Service accessible at www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. The authenticity of this document may be verified at www.sgs.com/verify. Any alteration, forgery or falsification of the content or appearance of the document is unlawful and offenders may be prosecuted to the fullest extent of the law.



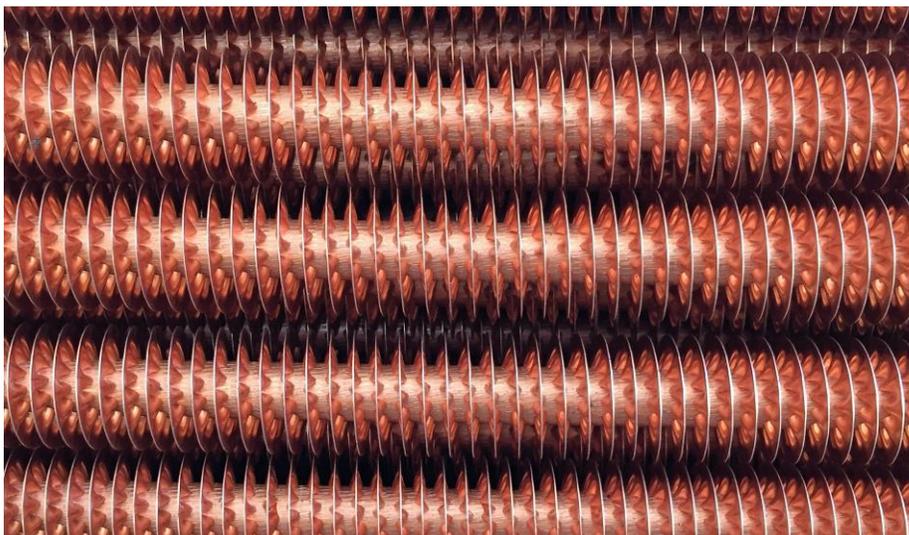
PRODUCT EXAMPLE FIN BLOCK COILS



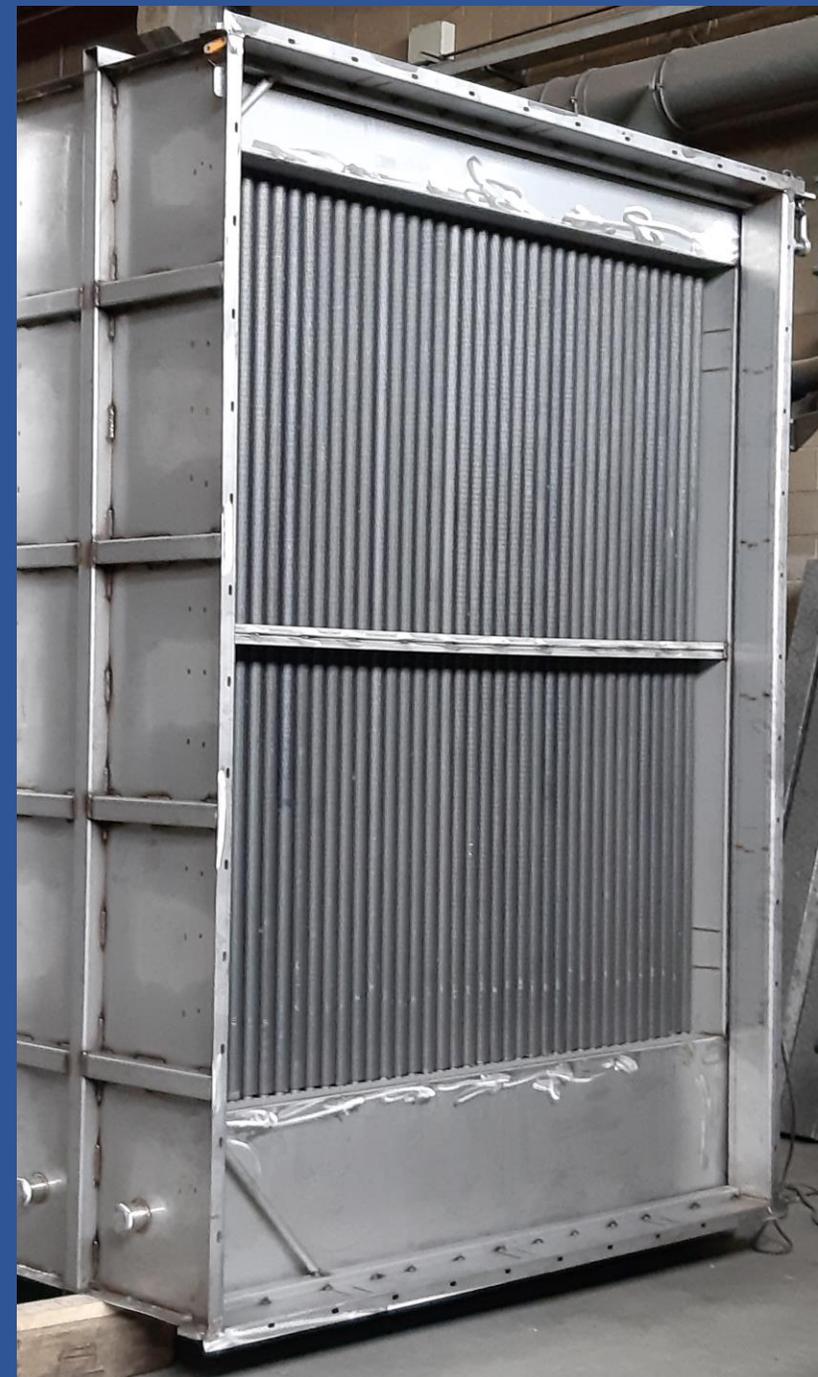
PRODUCT EXAMPLE FIN BLOCK COILS



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 Cambiagio (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

