

ROENEST

HEAT EXCHANGERS NATURALLY



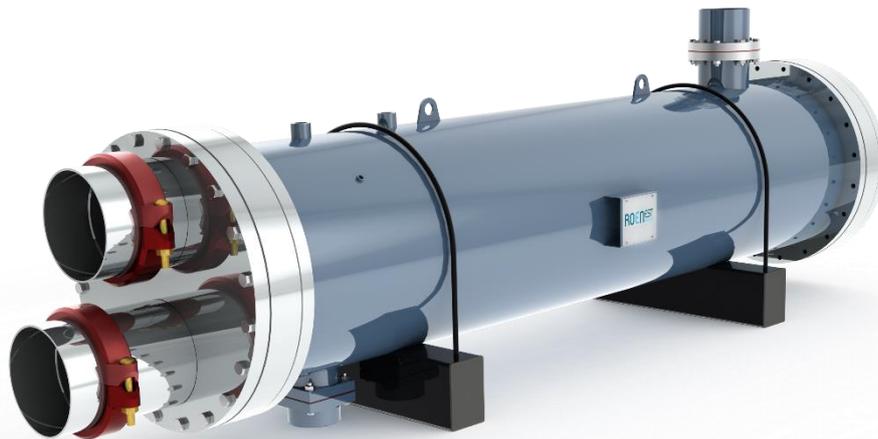
AN ENEX TECHNOLOGIES COMPANY

Release June 2022

HEAT EXCHANGERS

SHELL & TUBES

Shell & Tubes heat exchangers, for single phase and phase changing fluids, specifically designed for Heating, Heat Recovery, Air Conditioning, Process and Refrigeration equipment



ROEN EST presents its wide range of SHELL & TUBES heat exchanger, which ranks among the most complete in Europe, suitable for all commercial, industrial and process heating, air conditioning, heat recovery and refrigeration applications. ROEN EST is the solution provider for the design, manufacturing and supply of heat exchangers with particular focus in HVAC&R.

Founded in 1983 for the production of finned pack coils, today the company is a reference point for technology and capacity for solutions in air conditioning, refrigeration, heating and cogeneration. The Group's production structure is divided into two locations in Italy and Slovakia: two complementary and strategic factories, centers of excellence for the production of specific products. The Italian headquarters represents the heart of the company and is the driving force of innovation and technological development.

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LEADING IN THE SHELL & TUBES HEAT EXCHANGERS INDUSTRY

The SHELL & TUBE exchangers are the most common type of heat exchanger in many applications in the HVAC&R (Heating, Ventilating, Air Conditioning & Refrigeration) sector and they are suited also for high-pressure applications in many industrial and process fields. As its name implies, this type of heat exchanger consists of a shell (a large pressure vessel) with a bundle of tubes inside it. One fluid runs through the tubes, and another fluid flows over the tubes (through the shell) to transfer heat between the two fluids. The set of tubes is called a tube bundle and may be composed of several types of tubes.

Present document is fully dedicated to the SHELL & TUBES heat exchangers range of ROEN EST which can be segmented into the following main types:

CHILLERS PRODUCTS	HEAT RECOVERY
Evaporators	Combustion gas
Single pass	Steam
Condensers	Industrial fluids
Liquid receivers	Biogas

CONDENSERS AND DESUPERHEATERS



DIRECT EXPANSION EVAPORATORS



COMBUSTION GAS



STEAM



ROEN EST with its 2 European manufacturing sites provides to HVAC&R manufactures a secure source for heat exchangers, with an history of design, production and distribution of more than 35 years in over 50 countries

DISTINCTIVE FEATURES

In a mature industry like the one of Shell & Tubes heat exchangers ROEN EST have been able to innovate the approach to the Industry & Processes. With particular attention to new refrigerant applications and high energy efficiency orientation ROEN EST developed a large number of solutions in the Shell & Tubes field, in order to completely reply to the wide number of applications and technical requirements.

Distinctive features are:

- ❖ Extremely wide range of standard configurations accessible via dedicated calculation software: more than 15'000 configurations available;
- ❖ Maximum flexibility in the customization of ad hoc projects and solutions;
- ❖ Broad range of materials used for both production and surface treatments: copper, stainless steel, cupronichel (CuNi 90/10), titanium (on request), and carbon steel;
- ❖ Technical office at customers' disposal for the development of personalized solutions and technologies;
- ❖ Logistics support: order management and shipments tailored to customer requirements through collaborations with international carriers;
- ❖ Continuous investment in R&D for the design of innovative technological solutions and applications;
- ❖ REshell: proprietary design and selection software;
- ❖ Certifications: PED with CE, GOST, and LLOYD markings.

MATERIALS & PARTS

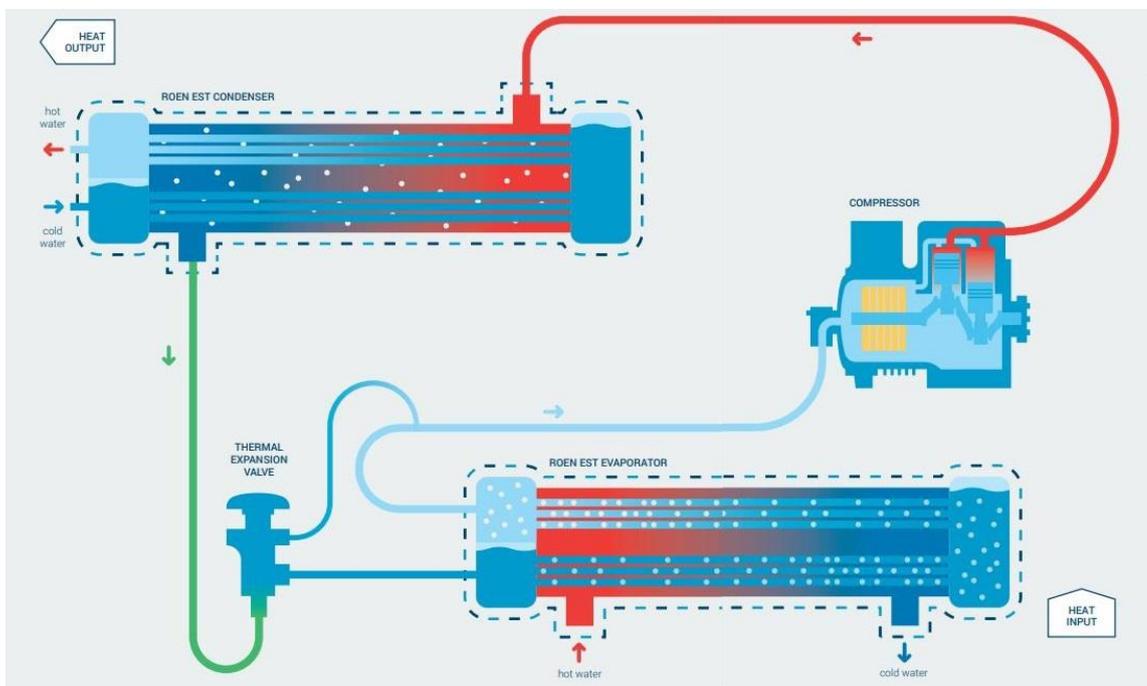
In combination to a wide range of possibilities, the different types of materials play a relevant role in this industry. ROEN EST has standardized a wide range of materials in order to fit to the different sectors in a very accurate way.

	Copper	Stainless steel	Cupronichel	Titanium	Carbon steel
Tubes	✓	✓	✓	✓	
Shell		✓			✓
Headers		✓			✓

2 MAIN PRODUCT GROUPS RANGES

Chillers Products

ROEN EST "Chillers products" family are mainly used in the air conditioning sector. Thanks to the phase change of primary fluid, the system subtracts/gives thermal energy from/to secondary fluid which can be water, a mixture of water and glycol or sea water. The most common uses are: Industrial water / water chillers, Industrial water / air chillers, Heat pumps, Industrial seawater / seawater chillers.



Main characteristics:

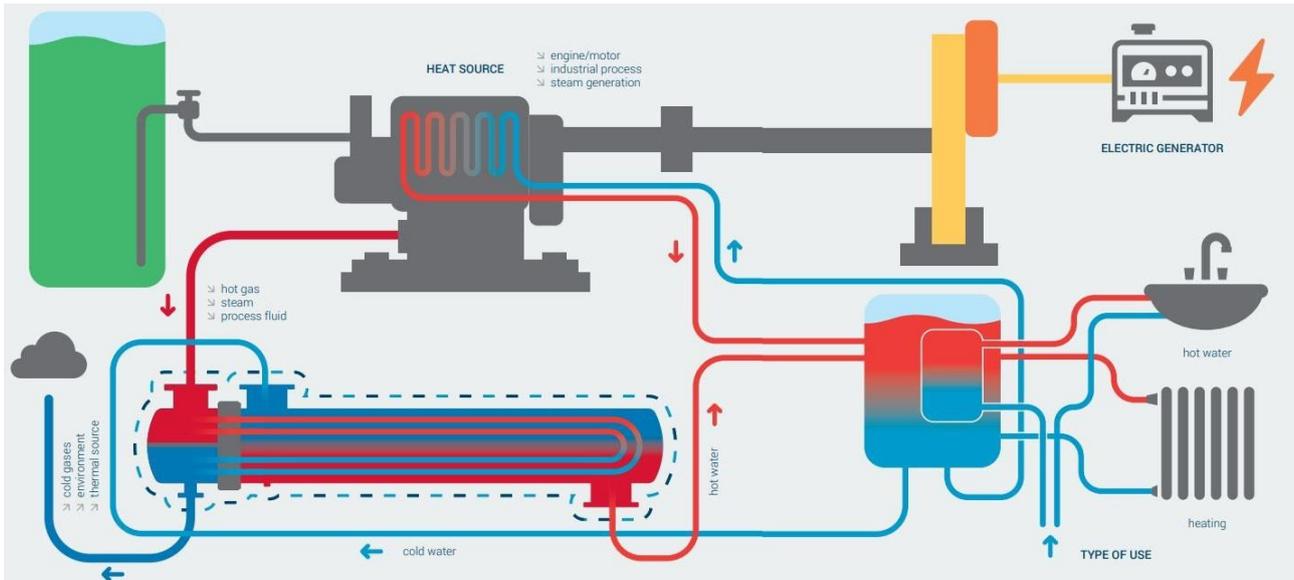
- ❖ Compatible with all synthetic refrigerants, including A2L and propane;
- ❖ Compatible with sea water;
- ❖ Possibility of customizing all the components;
- ❖ Variety of materials available for the shell and for the tubes, to be defined according to specific customer requests or to ensure compatibility with the fluid and working conditions. Copper, stainless steel, titanium, carbon steel, cupronickel, etc.;
- ❖ 10 available geometries and variety of thicknesses of tubes;
- ❖ Various types of connections.



The image is for illustrative purpose and it is referred to a Direct Expansion evaporator for Chillers

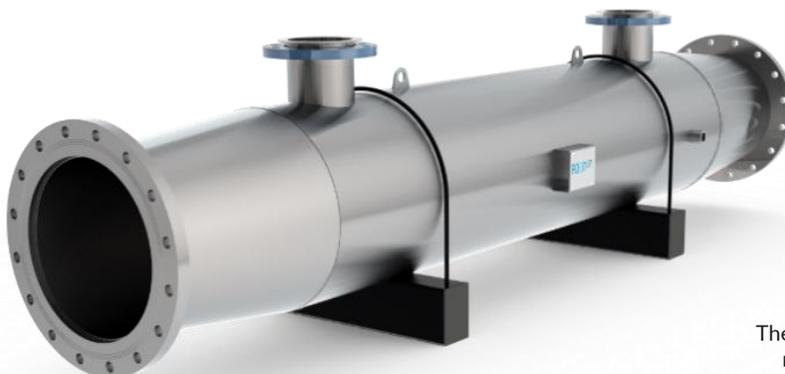
Heat Recovery Products

ROEN EST “Heat Recovery” shell and tube heat exchangers are used for all applications where it is necessary to recover heat from a primary to a secondary fluid. The dedicated applications are in general: cogeneration, biogas chillers, air dryers, oil coolers and steam condensation.



Main characteristics:

- ❖ Compatible with most of the liquid and gaseous fluids used in classic Heat Recovery applications;
- ❖ Dedicated and optimized sub-ranges for the use of biogas, compressed air, steam;
- ❖ Possibility of customizing all the components;
- ❖ Variety of materials available for the shell and for the tubes, to be defined according to specific customer requests or to ensure compatibility with the fluid and working conditions. Stainless steel, Titanium, Carbon steel, Cupronickel, etc.;
- ❖ 10 available geometries and variety of thicknesses of the tube wall to allow the desired performance to be achieved.

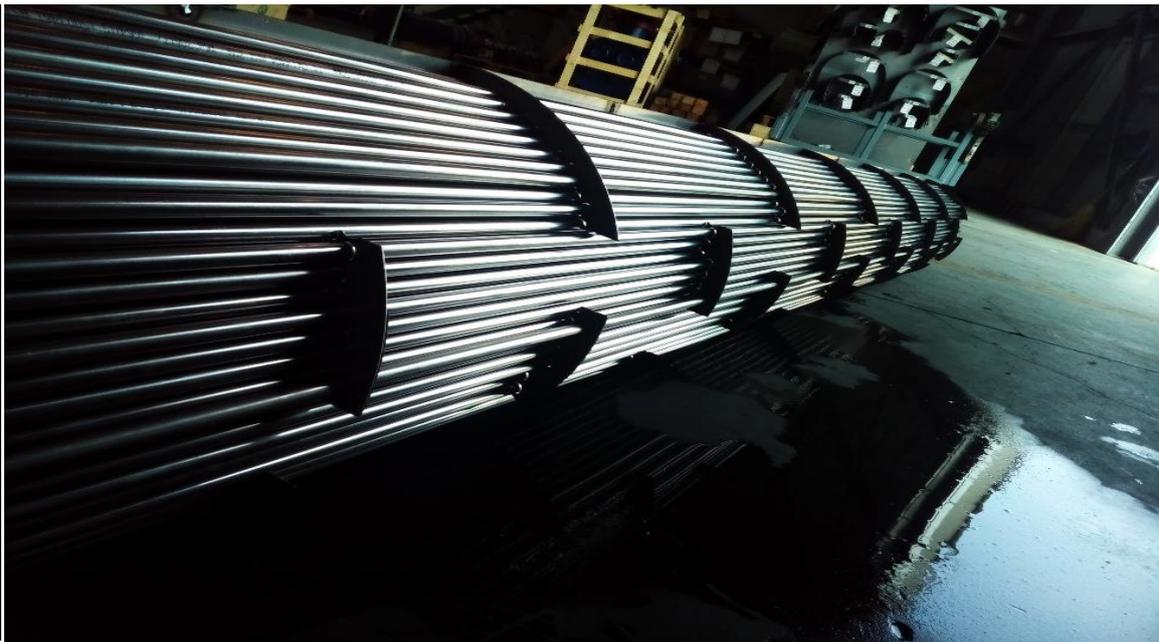


The image is for illustrative purpose and it is referred to a Combustion Gas application

CUSTOMIZATIONS

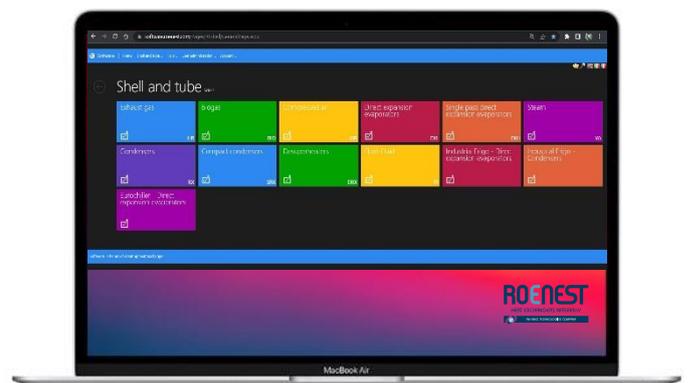
At ROEN EST before there were standard products, there were engineered products, with each heat exchanger designed for the application. In memory of this flexible approach ROEN EST experienced design and engineering staff stand ready to bring the best solutions to Customers using all options of customization. Here below are represented in a non-exhaustive list some of the possible customization levels for the SHELL & TUBES range.

Connections
Threaded
Gruvlok
Rotalock
Brackets
Standard - free
U-bolts
Welded
Custom
Shell side
Painted RAL5003
External insulation
Other
Materials ASTM / EN
Level indicators
On request



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- ❖ Save your selections
- ❖ High reliability



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