

**metallurgica medolago**

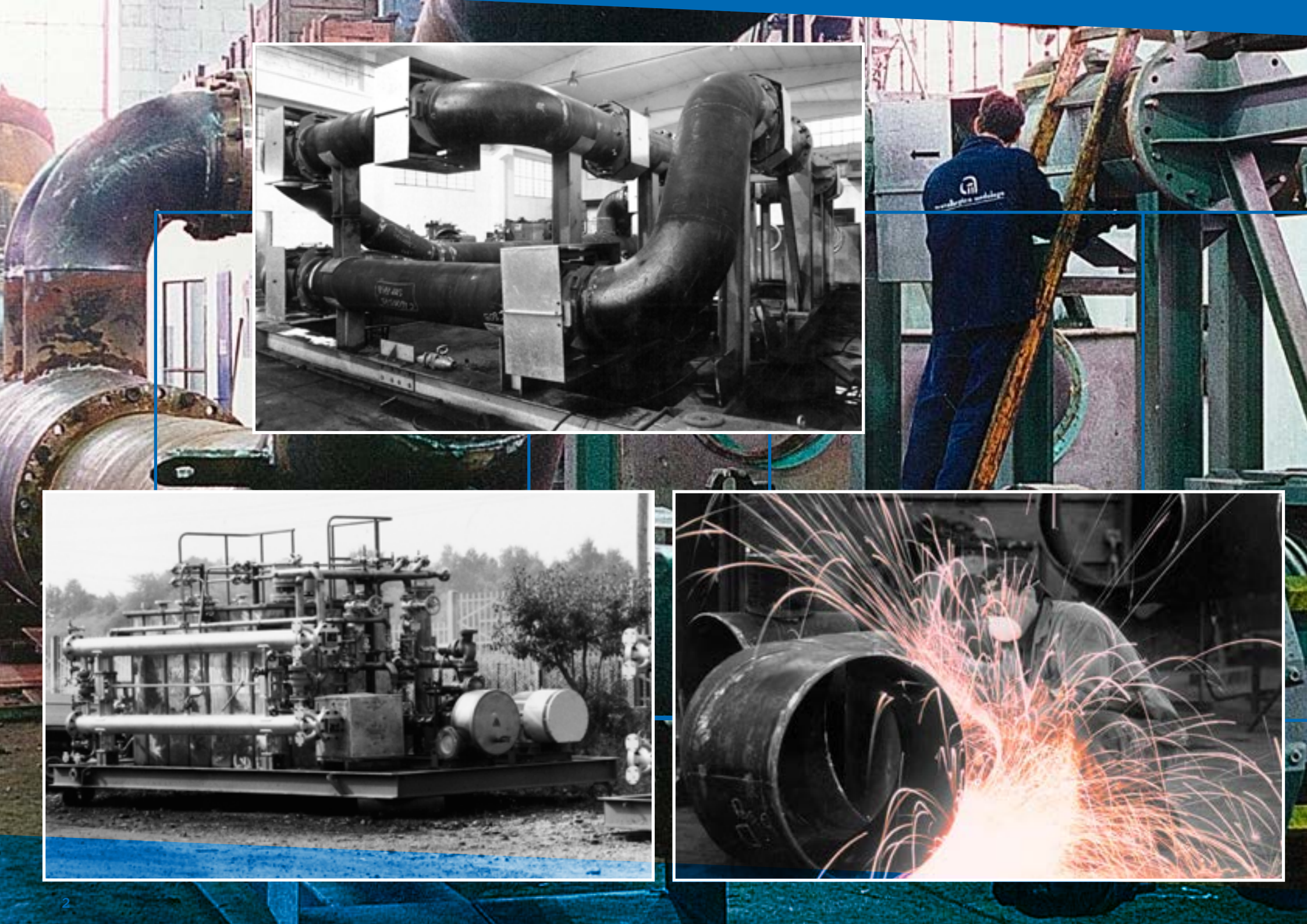


**Your ONE Shop Stop Supplier**





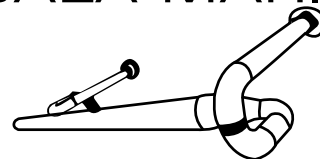








SALA MARIO



SALDATE



metallurgica  
medolago

L'INIZIO

**M.M. Metallurgica Medolago** s.r.l. viene fondata nel 1981, al fine di dare un'impronta industriale e completa all'esperienza della piccola realtà artigianale creata nel 1969 da Sala Mario denominata "Sala Mario tubazioni industriali" specializzata in produzione e montaggi di tubazioni prefabbricate.

Grazie alla volontà del fondatore, cresciuta in qualità prima ancora che in quantità, **Metallurgica Medolago** è riuscita nel corso degli anni a conquistare quote di mercato; è oggi un apprezzato partner per le maggiori Società di Ingegneria di Impianti nel settore Chimico e Petrochimico, per i più importanti utilizzatori finali, dalle Raffinerie ai grossi complessi Chimici e fino agli impianti di trattamento Gas e Acque.

A seguito della scomparsa prematura del fondatore, dalla fine degli anni '90 nella gestione dell'azienda, sono subentrati i figli Alessandro e Riccardo.

Oltre a continuare l'attività del padre, grazie alla maturata esperienza, la volontà di crescita ed alla continua ricerca di rinnovamento attraverso un mirato programma di investimenti, i due fratelli hanno portato l'azienda alle attuali dimensioni di media grandezza.

LA CRESCITA

## HISTORY and TRADITION

**M.M. Metallurgica Medolago** s.r.l. was founded in 1981, for the purpose of giving an industrial and complete imprint coming from the previous small company founded by Sala Mario who back in 1969 called "Sala Mario tubazioni industriali" specialised in the production and assembly of prefabricated piping.

Thanks to its founder's great determination, **Metallurgica Medolago** improved in terms of quality first and then in terms of size, and through the years it managed to conquer market shares. Today, the company is a partner that is greatly appreciated by major plant engineering companies in the chemical and petrochemical sectors, for the most important final users, from oil refineries to large chemical complexes, up to the gas and water treatment systems.

After the founder unfortunately passed away prematurely, his two sons, Alessandro and Riccardo, took over the family business at the end of the 1990s.

In addition to continuing their father's activity, thanks to the acquired experience, the will to grow and the constant search for innovation through a targeted investment programme, the two brothers have led the company to become a medium-sized business.

The Beginning

The Growth









ricerca

innovazione

sfide

Attraverso le strutture oggi utilizzate con le relative attrezzature e impianti di produzione, **Metallurgica Medolago** è in grado di progettare, costruire apparecchiature e componenti per lo scambio termico coprendo la quasi totalità delle gamme e tipologie richieste per le applicazioni nei campi Chimico, Petrochimico, Oil & Gas e produzione di Energie convenzionale ed alternativa. **Metallurgica Medolago** è dotata di uffici e servizi al cui interno operano figure professionali con lunga e provata esperienza avvalendosi delle più avanzate metodologie e supporti informatici ai fini della progettazione, cicli di fabbricazione, controllo e garanzia della qualità e logistica.

Through the facilities in use today, along with the relevant equipment and production plants, **Metallurgica Medolago** is capable of designing and building equipment and components for thermal exchange, covering just about all the ranges and types requested in the following fields: chemical, petrochemical, Oil & Gas and production of traditional and alternative energy. **Metallurgica Medolago** is equipped with offices and services where professional figures with longstanding and proven experience carry out their activities, availing themselves of the most advanced methodologies and computer media for the purpose of design, manufacturing cycles, quality assurance and control, and logistics.

L'impegno profuso, supportato dai risultati ottenuti, ha portato **Metallurgica Medolago** ad ottenere anno dopo anno sempre più l'apprezzamento ed il riconoscimento da parte dei maggiori Clienti nazionali ed internazionali e delle più importanti Società di Ingegneria.

The effort put in, supported by the results achieved, have led **Metallurgica Medolago** to increasingly attain, year after year, the appreciation and acknowledgment by leading national and international customers and by the most important engineering companies.

Per mantenere livelli di competitività all'interno del settore e ad incrementare le esportazioni, **Metallurgica Medolago** è pronta a consolidare e migliorare la propria presenza e posizione sul mercato, perseguendo costantemente la politica dell'innovazione e della ricerca e raccogliendo tutte le nuove sfide con le quali sarà chiamata a confrontarsi.

In order to maintain high levels of competitiveness within the sector and increase exports, **Metallurgica Medolago** is ready to consolidate and improve its presence and position on the market, constantly pursuing a policy of innovation and research and taking on all the new challenges that will present themselves along the way.

I RISULTATI

IL FUTURO

The Results

The Future

research

innovation

challenges



1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015





Sala Mario founded the small business bearing his name, dealing with the prefabrication and installation of industrial technological plants.

The company Sala Mario became M.M. Metallurgica Medolago s.r.l. The company specialised in the construction of equipment and components for thermal exchange.

After having acquired the technical and professional skills needed to process all kinds of metallurgies, from Carbon Steel to Nickel Alloy and Copper Alloy, Metallurgica Medolago launched its own production range with Shell and Tube Heat Exchangers and Air Cooler Heat Exchangers.

After the premature passing away of the founder, Sala Mario, the two sons Alessandro and Riccardo, who were already working for the company, took over and continued with the Metallurgica Medolago project.

A new department for mechanical processing and calendaring was inaugurated

Metallurgica Medolago became a member of HTRI, obtained the certifications ASME "U", "U2", "S" and ISO 9001 and, with the completion of its Engineering Department, made its debut on the international petrochemical and Oil & Gas markets

19  
69

19  
81

19  
91

19  
99

20  
01

20  
03

Sala Mario fonda l'omonima società artigianale impiegata nella prefabbricazione ed installazione di impianti tecnologici industriali

La società Sala Mario diventa Metallurgica Medolago, specializzandosi nella costruzione di apparecchiature e componenti per lo scambio termico

Dopo aver acquisito capacità tecniche e professionalità necessarie per la lavorazione di tutte le metallurgie dal Carbon Steel al Nickel Alloy e Copper Alloy Metallurgica Medolago implementa la propria gamma di produzione con Shell and Tube Heat Exchangers ed Air Cooler Heat Exchangers.

Con la prematura scomparsa del fondatore Sala Mario, sono i due figli Alessandro e Riccardo, già presenti in azienda, a dare continuità al progetto Metallurgica Medolago.

Nuovo reparto per le lavorazioni meccaniche e calandratura

Metallurgica Medolago diventa membro HTRI, acquisisce le certificazioni ASME "U", "U2", "S" ed ISO 9001 e con il completamento del dipartimento di ingegneria si presenta ai mercati del Petrochimico e dell'Oil & Gas internazionali



history

50 ANNI DI STORIA E INNOVAZIONE, CON UNO SGUARDO VERSO IL FUTURO



# 50 Years of History and Innovation, looking into the Future



Following the growth in the market of air-cooler type of exchangers Air Coolers, Metallurgica Medolago set up a Sister Company called S.M. s.r.l., for the production of finned tube of both the EMBEDDED and EXTRUDED type.

A 150 square metre bunker was built where to carry out X-RAY and GAMMA RAY checks in full safety

First expansion to the company, with the addition of a new 1.200 square metre production area.

Enhancement of the mechanical processing department with the installation of a vertical lathe; incorporation of CEREBRUM, an R&D company engaged in the development of new patents, for both in-company and external projects.

Metallurgica Medolago's entire production was transferred to the new building, adjacent to the existing one, with a covered surface of 5.000 square metres, lifting capacity up to 100 Tons and merging with S.M. Sister Company to create a single production complex with a total surface area of 10.000 square metres covered.

2 1993 1994 1995 1996 1997 1998 1999 2000 2001 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 ...

20  
03

20  
06

20  
08

20  
13

20  
14

...

A seguito dello sviluppo del mercato degli scambiatori di tipo Air Coolers, Metallurgica Medolago crea una Sister Company denominata S.M. s.r.l. per la produzione di Tubi Alettati di tipo EMBEDDED ed EXTRUDED.



S.M. srl

Realizzazione del Bunker di 150 Mq. per controlli X-RAY e GAMMA RAY



Prima espansione che aggiunge una nuova area produttiva di 1.200Mq.

present

Potenziamento reparto lavorazioni meccaniche con l'installazione di tornio verticale e nascita di CEREBRUM, società per R&D e realizzazione nuovi brevetti sia per progetti interni che esterni.



Cerebrum R&D  
Project

Trasferimento di tutta la produzione Metallurgica Medolago nel nuovo building, adiacente all'esistente, avente una superficie coperta di 5.000 Mq. con capacità di sollevamento fino a 100 Tonnellate e accorpamento con la Sister Company S.M. creando un unico polo produttivo di 10.000 Mq. coperti.



future



**QUALITÀ** **QUALITY**  
**EFFICIENZA** **EFFICIENCY**  
**ESPERIENZA** **EXPERIENCE**  
**TECNOLOGIA** **TECHNOLOGY**







**Metallurgica Medolago** grazie alla maturata esperienza, oggi è in grado di assistere come partner i clienti, partendo dalla progettazione termica e meccanica e la costruzione di una vasta gamma di apparecchiature secondo i principali codici e standard riconosciuti a livello internazionale.

## GAMMA DI PRODOTTI:

- Scambiatori di Calore tipo "TEMA" e con geometrie/chiusure speciali
- Scambiatori ad aria "API 661"
- Reattori – Colonne – Serbatoi
- Caldaie a recupero di calore – Condensatori
- Scambiatori di calore a piastre
- Riparazione – modifica e riqualificazione dei singoli componenti
- Prefabbricazione di tubazioni
- Componenti di ricambio

## MATERIALI IMPIEGATI

- Acciaio al Carbonio / Acciaio Micro Legato – Acciaio Basso Legato
- Acciaio Ferritico / Austenitico – Duplex /Super Duplex – Leghe di Nichel
- Rame e Leghe di Rame
- Acciai Placcati

## SERVIZI E UNITA' PRODUTTIVE

- Commerciale – Vendite
- Servizio post vendita e assistenza in cantiere – Supervisione
- Acquisti e logistica
- Progettazione, Ricerca e Sviluppo
- Gestione dei cicli produttivi
- Produzione tubi alettati
- Lavorazioni meccaniche a controllo numerico
- Controllo qualità e C.N.D. eseguiti principalmente in azienda
- Saldatura con le tecnologie di processo più avanzate
- Area di stoccaggio esterna e magazzino ricambi

## CERTIFICAZIONI & LICENZE

- NB Registration Certificate
- R – Stamp
- U2 - Stamp
- U – Stamp
- S - Stamp
- UNI EN – ISO 9001
- PED
- Modulo H
- AD 2000
- HTRI

Thanks to the experience acquired through the years, **Metallurgica Medolago** is now able to assist its customers as a valuable and trustworthy partner, starting from the thermal and mechanical design to the construction of a wide range of equipment according to main codes and standards acknowledged at the international level.

## PRODUCT RANGE :

- Shell and Tube Heat Exchangers "TEMA" type and special geometry/closures
- Air Coolers "API 661"
- Reactors – Columns – Vessels
- Heat-recovery boilers – Condensers
- Plate Heat Exchangers
- Repair – modification and requalification of single components
- Prefabricated piping & Coils
- Spare parts

## MATERIALS USED

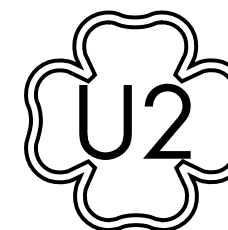
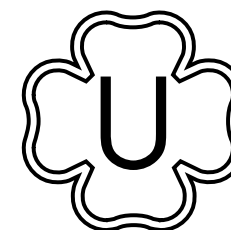
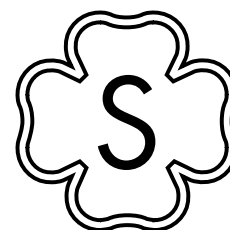
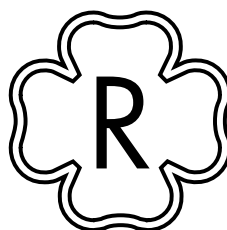
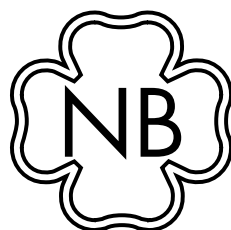
- Carbon Steel / Micro Alloyed Steel – Low Alloy Steel
- Ferritic/Austenitic Steel – Duplex /Super Duplex – Nickel Alloys
- Copper and Copper Alloys
- Clad Steel

## SERVICES & PRODUCTION UNITS

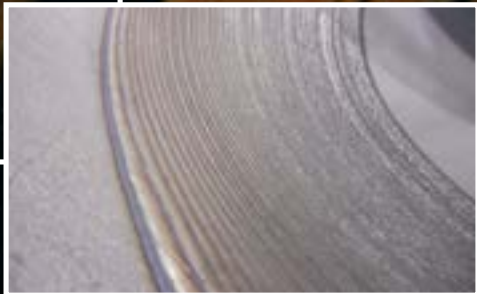
- Commercial – Sales
- After-sales service and site assistance – Supervision
- Procuraments & Logistics
- Design - Research & Development
- Production and Job management
- Production Finned Tubes
- Mechanical machining – NC
- Quality Control and N.D.E. almost performed in house
- Welding by last advanced process-technologies
- Outside storage areas & spare parts warehouse

## CERTIFICATIONS AND LICENSES

- NB Registration Certificate
- R – Stamp
- U2 - Stamp
- U – Stamp
- S – Stamp
- UNI EN – ISO 9001
- PED
- Module H
- AD 2000
- HTRI











## PERCHÈ PUNTARE SU METALLURGICA MEDOLAGO

**Metallurgica Medolago**  
ha un unico obiettivo:  
“qualità e competitività”,  
sempre in tempo”

La progettazione  
e la produzione di  
**Metallurgica Medolago**  
viene gestita da  
professionisti utilizzando  
le tecnologie e i  
programmi più avanzati

**Metallurgica Medolago**  
è sempre attenta e  
scrupolosa a soddisfare  
tutte le esigenze dei  
clienti a partire dall’inizio  
del contratto fino alla  
messa in funzione delle  
apparecchiature fornite.

**Metallurgica Medolago**  
garantisce un livello di  
flessibilità e una politica  
mirata al risultato che  
consentono di accettare  
anche le sfide più difficili



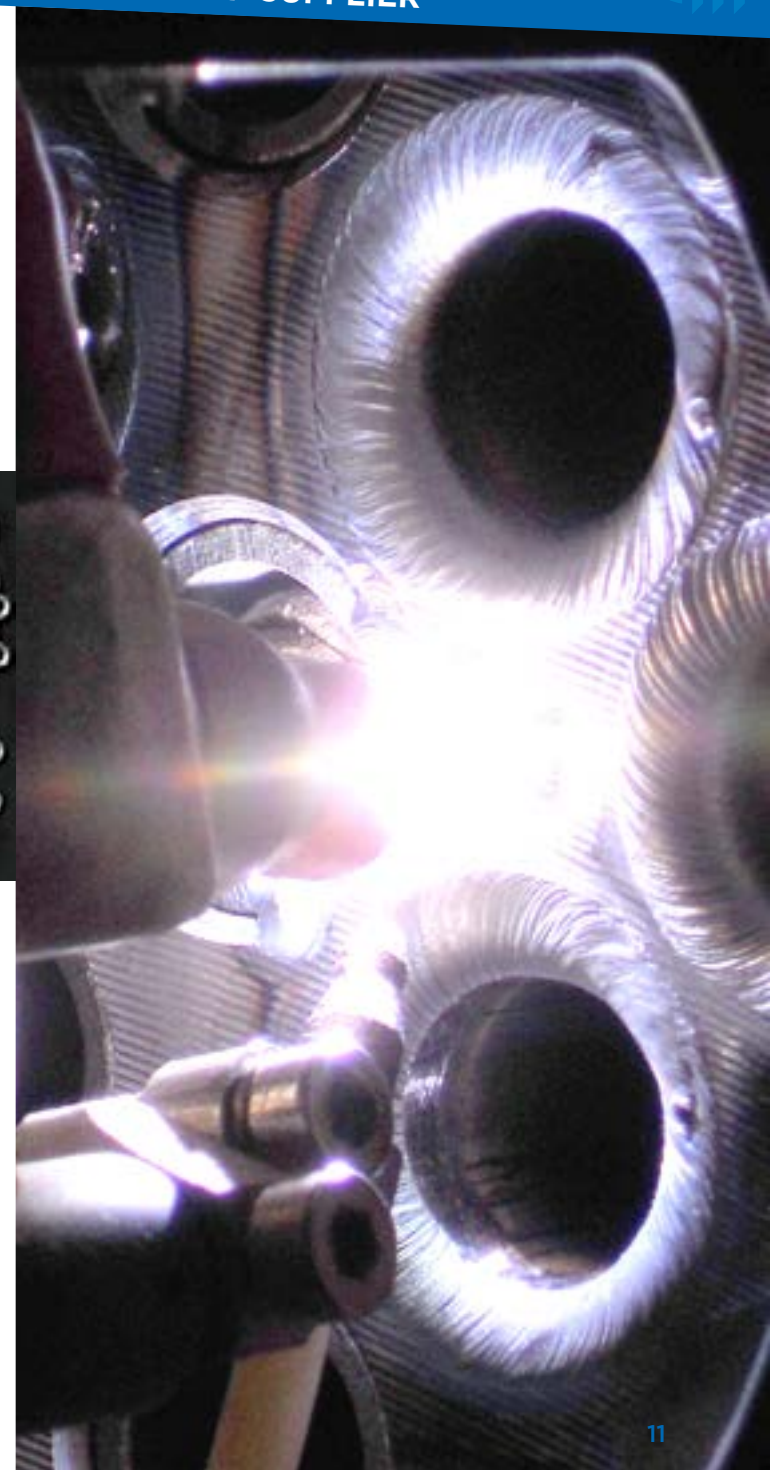
## WHY YOU CAN LOOK AT METALLURGICA MEDOLAGO

**Metallurgica Medolago**  
has a unique goal  
“quality and competitive  
on time”

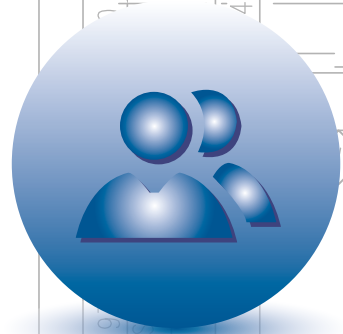
**Metallurgica Medolago**  
’s designing and  
production is managed  
by professional people  
by using the most  
advanced technologies  
and machineries

**Metallurgica Medolago**  
always pays attention  
and works very tightly in  
order to meet all needs  
of clients starting from  
the beginning of contract  
until the put into  
operation of supplied  
equipment

**Metallurgica Medolago**  
can guarantee a level of  
flexibility and “straight at  
the point” policy which  
allow to accept even the  
most strong challenges







**ANALISI PROGETTO  
E SOLUZIONI A  
SUPPORTO DEL  
CLIENTE**

**PROJECT ANALYSIS  
AND SOLUTIONS  
SUPPORTING THE  
CUSTOMER**



**SVILUPPO  
PROGETTO CON  
RELATIVI CALCOLI  
E VERIFICHE  
STRUTTURALI**

**PROJECT  
DEVELOPMENT AND  
RELATED STRUCTURAL  
CALCULATIONS-  
VERIFICATIONS**



**REALIZZAZIONE  
DEL PROGETTO  
APPROVATO**

**EXECUTION OF FINAL  
APPROVED PROJECT**

**HTRI**

**HEAT EXCHANGER SPECIFICATION SHEET**

Customer \_\_\_\_\_ Job No. \_\_\_\_\_  
Address \_\_\_\_\_ Reference No. \_\_\_\_\_  
Plant Location \_\_\_\_\_ Proposal No. \_\_\_\_\_  
Service of Unit \_\_\_\_\_ Date 17/09/2014  
Size CARICA / EFFLUENTE REATTORE (CASO EOR) Item No. 121-E-2 B  
Surf/Unit (Gross/Eff) 1115 x 6706 mm Type BES Horizontal Connected In 1 Parallel 385,28  
385,28 / 361,06 m2

**PERFORMANCE OF ONE UNIT**

	Shell Side	Tube Side
Fluid Allocation	EFFLUENTE DI REAZIONE	KEROSENE CAP
Fluid Name		
Fluid Quantity, Total	41324	166667
Vapor (In/Out)	132296	26278
Liquid		147342
Steam		
Water		
Noncondensables		
Temperature (In/Out)	26278	166667
Specific Gravity	147342	
Viscosity		
Molecular Weight, Vapor	276,30	204,04
Molecular Weight, Noncondensables	0,5502	0,6667
Specific Heat	0,0400 V/L 0,1219	0,2250
Thermal Conductivity	0,0373 V/L 0,1419	
Latent Heat	0,6999 V/L 0,7155	
Inlet Pressure	0,1080 V/L 0,0489	
Velocity	43,74	0,6213
Pressure Drop, Allow/Calc	32,440	0,0592
Fouling Resistance (min)	49,41	0,655
Heat Exchanged	0,600	0,053
Transfer Rate, Service	3,9575 MM kcal/hr	47,772
	309,19 kcal/m2-hr-C	0,000600

**CONSTRUCTION OF ONE SHELL**

	Shell Side	Tube Side
Design/Test Pressure	barG	MTD (Corrected)
Design Temperature	C	35,5 C
No Passes per Shell	49,200 /	Actual 341,53 kcal/m2-h
Corrosion Allowance	310,00	Sketch (Bundle/Nozzle Orientation)
Connections	1	
Size & Rating	3,000	
In	1 @ 381,00	
Out	1 @ 381,00	
Intermediate	1 @ 193,68	
Tube No. 960	@	
Tube Type Plain	OD 19,050 mm	
Shell	Low chrome steel (2.25 Cr, 1 Mo)	
Channel or Bonnet	Thk(Avg) 1,816 mm	
Tubesheet-Stationary	ID 1115,0	
Floating Head Cover	OD 1165,8 mm	
Baffles-Cross	Material 321 Stainless steel (18 Cr,10 Ni)	
Baffles-Long	Length 6706, mm	
Supports-Tube	Type NTIW-Seg.	
Bypass Seal Arrangement	5 pairs seal strips	
Expansion Joint	%Cut (Diam) 17	
Rho-V2-Inlet Nozzle	Seal Type None	
Gaskets-Shell Side	U-Bend	
-Floating Head	Tube-Tubesheet Joint	
Code Requirements	Bundle Entrance	
Weight/Shell	24644 kg	
Remarks:	Tube Side	

Filled with Water 32655 kg

TEMA Class R

Bundle 11





YOUR "ONE SHOP STOP SUPPLIER"

#### CODES & RULES:

ASME VIII Div. 1&2, EN13445  
(PED Directive), VSR/S/M,  
CODAP, PD5500, RTOD,  
AD2000 MERKBLATT

#### SOPHISTICATED ANALYSIS:

Finite element  
analysis 2D/3D based  
on ANSYS licensed  
software

#### MECHANICAL CALCULATIONS:

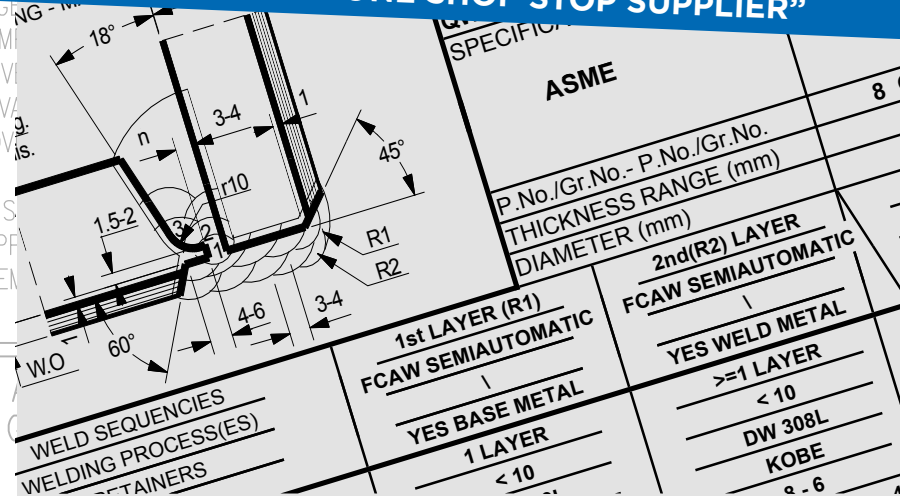
PV Elite: ASME VIII div. 1&2,  
EN 13445, codici TEMA  
AD - Merkblatt 2000  
RTOD, VSR e VSG per  
regolamento italiano  
WRC 107/297 Bulletin  
Methods, Zick's method

#### THERMAL CALCULATION:

HTRI: Xist Licensed  
Software

#### STRUCTURAL CALCULATION:

PV Elite licensed software  
Staad professional software (structural analysis)  
Inventor professional software (drawing/ stress analysis)  
In house software programs for  
wind/earthquake calculation  
according to National and  
International rules

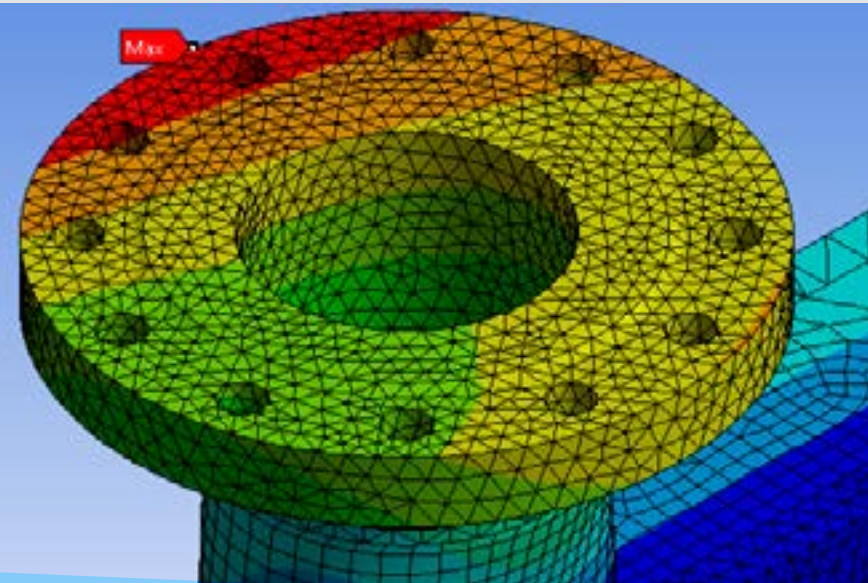


Air Coolers

Shell & Tube  
Heat Exchangers

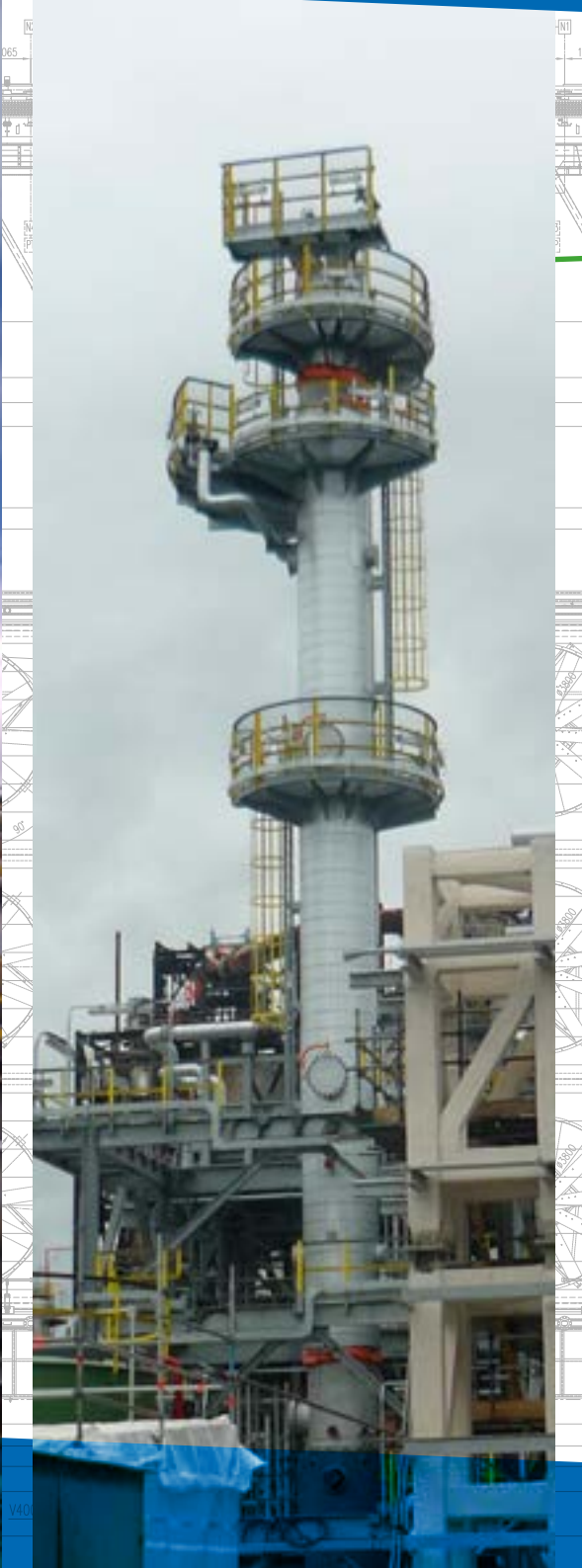
Pressure Vessels

Columns-Towers



SOFTWARE & ENGINEERING

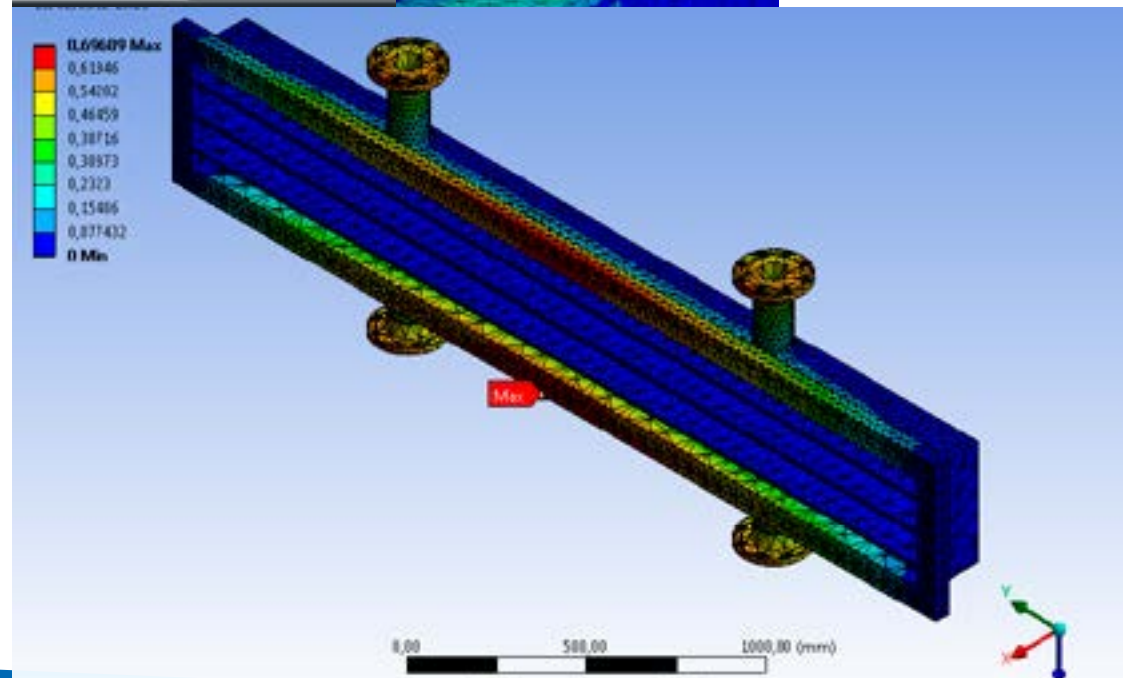
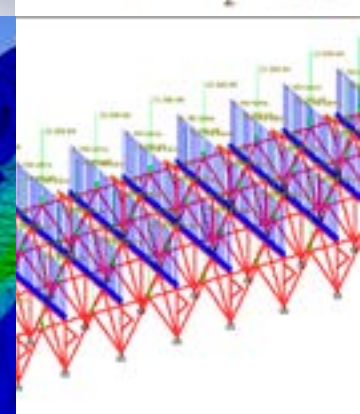
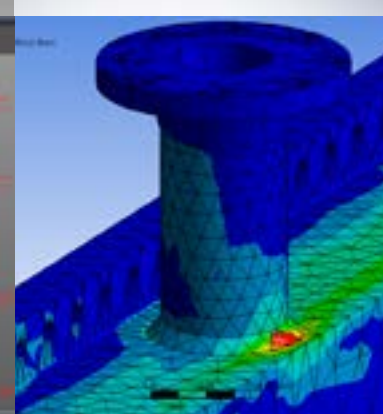
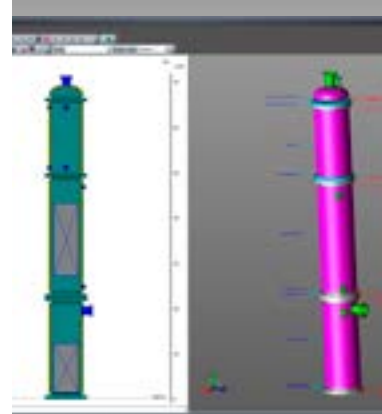
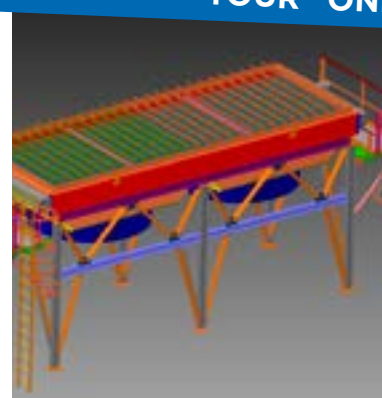
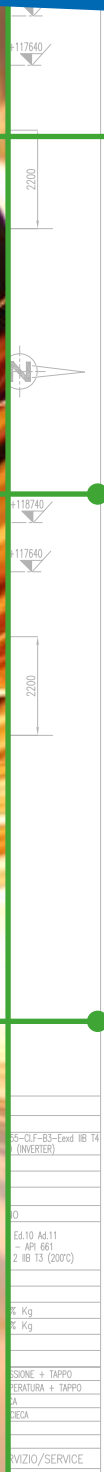








YOUR "ONE SHOP STOP SUPPLIER"







# S.M. srl

## FINNED TUBES

La società **S.M. s.r.l.** viene fondata nel 2003 come Sister Company della M.M. Metallurgica Medolago, con l'obiettivo di rispondere al mercato, in continuo sviluppo, degli scambiatori ad aria. **S.M.** ha sviluppato la propria attività produttiva di tubi alettati "EMBEDDED" con alette tipo L, LL, KL, G e tubi alettati "EXTRUDED - EXTRUDED SERRATED". La produzione comprende tubi base in Acciaio al Carbonio, Acciaio Inox, Duplex, Super Duplex e Leghe di Rame aventi diametri 1" (25,4 mm) 1½" (31,8 mm) 1½" (38,1 mm) 2" (50,8 mm) con lunghezze variabili fino ad un massimo di 20mt. I nastri o i tubi per la realizzazione delle alette sono in Alluminio, Acciaio al Carbonio e Rame.

Abbiamo inoltre esteso la nostra attività, offrendo la semplice fornitura di tubi scambio lisci, tubi "LowFin" e tubi "High Frequency". L'esperienza acquisita nel settore Oil & Gas, Chimico, Petrochimico e delle Energie convenzionali ed alternative, ci permette di offrire un servizio nelle forniture di Tubo Pipe, raccorderia, flange e valvole, con consegne pronte a magazzino, così come su specifica produzione, assicurando ai clienti competenza, professionalità e supporto tecnico, estendendo la ns. assistenza al post vendita. I prodotti di nostra fornitura, provengono da fabbriche di produzione altamente qualificate e approvate ISO 9001.

**S.M. s.r.l.** as been founded in 2003 as M.M. Metallurgica Medolago's sister company with the focus to meet the more and more growing up market demand into the field of air coolers application. Since the beginning **S.M.** has concentrate its production against the most common high finned tubes typology like "EMBEDDED" type L-LL-KL-G as well as "EXTRUDED / EXTRUDED SERRATED". The range of production covers tube O.D size 1" (25,4 mm) 1½" (31,8 mm) 1½" (38,1 mm) 2" (50,8 mm) with a max length until 20 mt. and the handled materials include Carbon Steel, Stainless Steel, Duplex, Super Duplex and Copper Alloys bare tubes finned with Aluminium, Carbon Steel and Copper Alloys.

With a view to better serving our Clients **S.M.** can offer the supply of bare exchanger tubes and, on special request also Low-Fin tubes and HIGH Frequency tubes. **S.M.** has developed its activity by offering a comprehensive service, providing its expertise to the Process Industries, Oil & Gas, Petrochemical Company and Energy Power fields, allow us to offer a complete service by supplying Pipes, fittings, flanges & valves both from stock as well as from specific production and Piping Packages. Ensuring our clients competent and professional service, technical support and after sale service. All products we supply are from reputed and approved fully certified ISO 9001 manufacturers.







## QUALITÀ • AMBIENTE • SICUREZZA

Il sistema di gestione qualità di **Metallurgica Medolago** è ormai consolidato, grazie alla certificazione UNI EN ISO 9001 della TUV in possesso dal 2003. Il sistema di gestione di ambiente, salute e sicurezza sul lavoro costituisce da tempo una parte integrante della gestione generale dell'azienda.

**Metallurgica Medolago** ha attuato una politica di sicurezza e ambiente in accordo con il DL.81/08 con la nomina di RSPP e ASPP, uniformata seguendo i requisiti generali minimi di legge e per il rischio di posti di lavoro più specifico, **Metallurgica Medolago** ha effettuato un'analisi completa dei rischi e formato tutto il personale di conseguenza. L'azienda crede nella prevenzione e investe per far sì che le leggi, sempre più restrittive, da vincoli si trasformino in opportunità. Per questo l'azienda ha scelto di adottare un sistema di sicurezza sul lavoro in conformità alla norma ISO 14001: 2004 che integra obiettivi e politiche con quelli della qualità e, in generale, con quelli della progettazione e della produzione.



## QUALITY • ENVIROMENT • HEALT & SAFETY

**Metallurgica Medolago** quality management system is well-established, thanks to it having been certified UNI EN ISO 9001 by TUV since 2003. The environmental and workplace health and safety management system has long been an integral part of general company management.

**Metallurgica Medolago** has implemented a policy for environmental safety in compliance with Italian Legislative Decree 81/08, and has RSPP (Head of Safety and Prevention Service) and an ASPP (Assistant Head of Safety prevention Service), trained according to the minimum general legal requirements. For more specific occupational risks, **Metallurgica Medolago** has performed a thorough risk analysis and has trained all personnel accordingly. The company believes in prevention and invests so that the increasingly restrictive laws are not viewed as constraints but as, opportunities instead. For this reason, the company has chosen to adopt an environmental and workplace, health and safety, in compliance with Standard ISO 14001:2004 that integrates objective and policies with quality objectives and policies and more generally speaking, with those pertaining to design and production.





February 18, 2014

Mr. Alessandro Sala  
metallurgica medolago s.r.l.  
Via Carso 69  
Madone (Bergamo), 24040  
ITALY

**THE NATIONAL BOARD**

SUBJECT: National Board

Dear Mr. Sala:

Enclosed is your National Board and pressure vessel certification confirming to the NBIC issued based upon the information provided.

**ISSUANCE DATE**  
**EXPIRATION DATE**

A renewal notice will be sent to you.

Your authorization is valid for the following:

**METALLURGICAL REPAIRS AND EXTENSIONS**

**PLEASE NOTE:** The location and scope of work shall have to be approved by the National Board.

**ASME**  
CERTIFICATION BOARD

To: Users of the ASME Boiler and Pressure Vessel Code

Subject: Procedure on Questions Involving the Code

The purpose of this letter is to describe the procedure that should follow when questions arise concerning the Code or its interpretation and revisions or, or provide consulting services.

ASME does not approve, certify, rate and accordingly, inquiries requiring technical assistance should be directed to the ASME staff as a consultant on specific engineering questions. The activities of the ASME staff are limited to the interpretation and revisions of, or provide consulting services.

Mandatory provisions are limited to the ASME Boiler and Pressure Vessel Code. Questions concerning regulatory body or the National Board should be directed to the National Board.

Questions concerning provisions of the Code should be directed to the ASME staff.

February 26, 2014

Mr. Alessandro Sala  
metallurgica medolago s.r.l.  
Via Carso 69  
Madone (Bergamo) 24040  
Italy

Subject: Renewal of ASME Certificates of Authorization

Dear Mr. Sala:

Enclosed are your Certificates of Authorization to apply the ASME Certification Mark to items, which you built in accordance with the ASME Boiler and Pressure Vessel Code. If this is a new issuance, the Certification Stamp is also enclosed. The purpose of the Certification Stamp is solely for application to items, which have been built in accordance with the Code, and the use of the certification mark in advertising is restricted.

**www.tuv.com**

**TÜV Rheinland**

**CERTIFICATE**

The Certification Body TÜV Rheinland Italia certifies, in accordance with the TÜV Rheinland Group procedures, that the

**Certificate**

Quality Assurance System

acc. to Directive 90/269/EEC

in accordance with

EN ISO 9001:2008

Metallurgica Medolago S.r.l.  
Via Carso, 69  
12404 Madone (BG)

Standard: EN ISO 9001:2008

Scope: Design, production and maintenance of heat exchangers, pipelines and finned tubes.

Issued on: 12/10/2013

Valid until: 12/10/2015

Signature: [Signature]

Stamp: [Stamp]

**ASME**

**U**

The named company (ASME) for the application of the ASME Boiler and Pressure Vessel Code is authorized to apply the ASME Certification Mark to items, which you built in accordance with the Code, and the use of the certification mark in advertising is restricted.

**ASME**

**U2**

The named company (ASME) for the application of the ASME Boiler and Pressure Vessel Code is authorized to apply the ASME Certification Mark to items, which you built in accordance with the Code, and the use of the certification mark in advertising is restricted.

**ASME**

**S**

The named company (ASME) for the application of the ASME Boiler and Pressure Vessel Code is authorized to apply the ASME Certification Mark to items, which you built in accordance with the Code, and the use of the certification mark in advertising is restricted.

**M. M. Metallurgica Medolago Srl**

is a member of

**Heat Transfer Research, Inc.**

the world's premier source of technology, information, services, and software in the field of process heat transfer.

**HTRI**

Current Memberships  
October 1, 2014 - September 30, 2015

**THE NATIONAL BOARD OF BOILER & PRESSURE VESSEL INSPECTORS**

**Certificate of Authorization**

This is to certify that

**METALLURGICA MEDOLAGO S.R.L.**  
VIA CARSO 69  
MADONE (BERGAMO), 24040  
ITALY

is authorized to use the "R" Stamp in accordance with the provisions of the National Board.

The scope of Authorization is limited to:

**METALLURGICAL REPAIRS, ASSEMBLY, AND/OR ALTERATIONS CONFORMING TO THE NATIONAL BOARD REQUIREMENTS.**

**CERTIFICATE NUMBER:**  
**ISSUE DATE:**  
**EXPIRATION DATE:**

**THE NATIONAL BOARD OF BOILER & PRESSURE VESSEL INSPECTORS**

**Certificate of Authorization**

This is to certify that

**METALLURGICA MEDOLAGO S.R.L.**  
VIA CARSO 69  
MADONE (BERGAMO), 24040  
ITALY

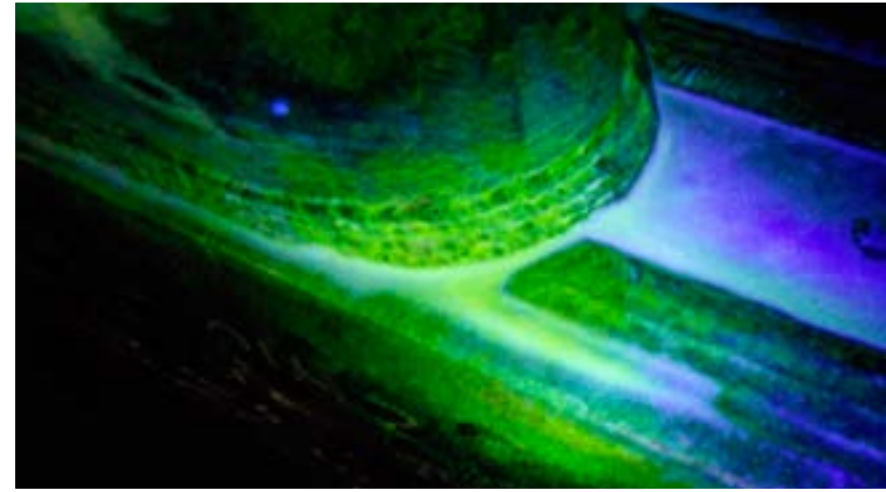
is authorized to apply the "NB" mark and register boiler, pressure vessel, or other pressure retaining items with the National Board in accordance with its provisions.

The scope of Authorization is limited to items in accordance with:

**ASME**  
**Stamp:**



# MAIN EQUIPMENT – MACHINES & FACILITIES







Client/User: K.O.C. – KUWAIT  
Tema Type/Size/Weight/Design Pressure: AFS / 940x4877 / 11500 Kg / 33,1 Bar.g  
Tube Type/Material: Bare Tubes / ASME SB163 UNS N08825



Client/User: Ge Oil & Gas /KNPC – KUWAIT  
Tema Type/Size/Weight/Design Pressure: AES / 711x6706 / 6550 Kg / 12 Bar.g  
Tube Type/Material: Bare Tubes / ASME SA179



Client/User: KÖRTING AG / ZAO " ANTIPINSKY REFINERY " - RUSSIAN FEDERATION  
Tema Type/Size/Weight/Design Pressure: AXS / 1900x10500 / 65000 Kg / 10 Bar.g  
Tube Type/Material: Bare Tubes / ASTM A312 TP.316L



Client/User: Ge Oil & Gas / BOREALIS STENUNGSUND PLANT - SWEDEN  
Tema Type/Size/Weight/Design Pressure: DEU / 660x5300 / 12800 Kg / 334 Bar.g  
Tube Type/Material: Bare "U" Tubes / ASTM A210 Gr.A1



Client/User: PHILLIPS 66 / WHITEGATE REFINERY – IRELAND  
Tema Type/Size/Weight/Design Pressure: BHU / 896x6580 / 7800 Kg / 25,5 Bar.g  
Tube Type/Material: Bar "U" Tubes / ASTM A179



Client/User: AMMONIA CASALE / ZAKLADY AZOTOWE PULAWY " SPOLKA AKCYJNA - POLAND  
Tema Type/Size/Weight/Design Pressure: NEN / 1600x7976 / 42150 Kg / 34 Bar.g  
Tube Type/Material: Bare tubes / ASTM A213 TP.304L



Client/User: AMMONIA CASALE / ZAKLADY AZOTOWE PULAWY " SPOLKA AKCYJNA - POLAND  
Tema Type/Size/Weight/Design Pressure: SPECIAL AEU / 1400/2500x3119 / 15500 Kg / 7 Bar.g  
Tube Type/Material: Bare "U" tubes / ASTM A213 TP.316L



Client/User: GE Oil & Gas / Nuovo Pignone  
Tema Type/Size/Weight/Design Pressure: Special DEU / 1020x6100 / 30500 Kg / 620 Bar.g  
Tube Type/Material: Bare "U" tubes / ASTM A210 Gr.C



Client/User: METHANOL HOLDING TRINIDAD LTD / POINT LISAS - TRINIDAD  
Tema Type/Size/Weight/Design Pressure : DXU / 750x6500 / 11000 Kg / 126 Bar.g  
Tube Type/Material: Bare "U" tubes / ASTM B163 UNS N04400



# Shell and Tube Heat Exchangers



Client/User: AMMONIA CASALE / ZAKLADY AZOTOWE PULAWY " SPOLKA AKCYJNA - POLAND  
Tema Type/Size/Weight/Design Pressure: SPECIAL BEM / 1100x8093 / 30700 Kg / 34 Bar.g  
Tube Type/Material: Bare tubes / ASTM A213 TP.316L



Client/User: Ge Oil & Gas / NUOVO PIGNONE  
Tema Type/Size/Weight/Design Pressure: DEU / 1000x9800 / 39000 Kg / 330 Bar.g  
Tube Type/Material: Bare "U" tubes / ASTM A213 TP.304L



Client/User: PHILLIPS 66 / HUMBERSIDE – UK  
Tema Type/Size/Weight/Design Pressure: AXU / 762x4877 / 8413 Kg / 150 Bar.g  
Tube Type/Material: Bar "U" Tubes / ASTM A179



Client/User: DUPONT INTERNATIONAL SA/ RAFFINERIA DI MILAZZO - ITALY  
Tema Type/Size/Weight/Design Pressure: Spare Bundle / 1610x8528 / 23500 kg / 6,9 Bar.g  
Tube Type/Material: SPECIAL Bare " U" BUNDLE WITH GRID BUFFLE TYPE / ASTM A179



Client/User: Ge Oil & Gas / BRAHMAPUTRA CRACKER & POLYMER LTD  
Tema Type/Size/Weight/Design Pressure: CONDENSER / 2470/3055x5670 / 68000 Kg / 7,35 Bar.g  
Tube Type/Material: Bare tubes / ASTM B111 UNS C70600



Client/User: METHANOL HOLDING TRINIDAD LTD / POINT LISAS - TRINIDAD  
Tema Type/Size/Weight/Design Pressure: DEU / 1850x7200 / 42200 Kg / 88,25 Bar.g  
Tube Type/Material: Bare "U" Tubes / ASTM A213 TP.304



Client/User: KÖRTING AG / OMV PETROM S.A. PETROBRAZI REFINERY – ROMANIA  
Tema Type/Size/Weight/Design Pressure: AES / 1810x6000 / 35000 kg / 7 Bar.g  
Tube Type/Material: Bare Tubes / ASTM B111 UNS C71500



Client/User: QAFCO / MESAIEED  
Tema Type/Size/Weight/Design Pressure: BEM / 16 "x4877 / 1900 Kg / 52 Bar.g  
Tube Type/Material: Bar Tubes / ASME SB668 UNS N08028 (SANICRO 28)



Client/User: COMPRIMO / AMOCO CHEMICAL - BELGIUM  
Tema Type/Size/Weight/Des. Pres.: SPCL FX TUBESHEET / 1550/1900x5500 / 25300 Kg / 20,7 Barg  
Tema Type/Size/Weight/Des. Pres.: SPCL FX TUBESHEET / 1280x7000 / 26000 Kg / 20,7 Barg  
Tube Type/Material: Bare Tubes WITH GRID BUFFLES TYPE / ASTM A179  
Tube Type/Material: LOW FIN Tubes / ASTM A179



# Air Coolers



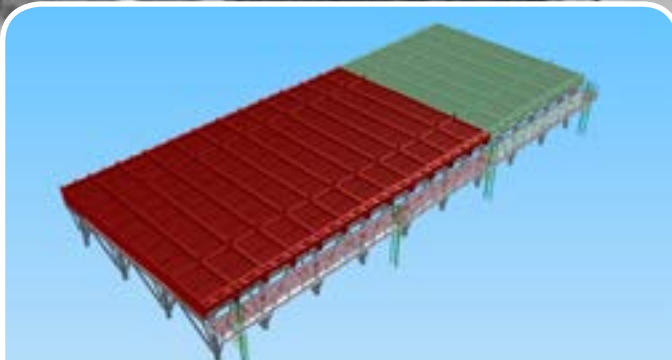
Client/User: AIRFINS LTD / GNPOC – SUDAN  
API661 Type/Plot Plan/Weight/Design Pressure: BONNET / 24000x12144 / 88000 Kg / 12 Bar.g  
Tube Type/Material: "KL" Fin Tubes / ASME SA179



Client/User: AIRFINS LTD / KCC PROCESS EQUIPMENT LTD – TENGIZ KAZAKHASTAN  
API661 Type/Plot Plan/Weight/Design Pressure: PLUG + Winterization System "D" / 8400x15000x7000 / 75 Bar.g  
Tube Type/Material: EXTRUDED Fin Tubes / ASME SA213 TP.316L



Client/User: AIRFINS LTD / DRESSER RAND – AHMEDABAD INDIA  
API661 Type/Plot Plan/Weight/Design Pressure: PLUG - Special Fans / 5400x13500x5500 / 30000Kg / 89,7 Bar.g  
Tube Type/Material: "KL" Fin Tubes / ASME SA214 Gr.M



Client/User: ISG SPA / ENI VAL D'AGRI - ITALY  
API661 Type/Plot Plan/Weight/Design Pressure: PLUG / 40000 x 16000 / 300000 kg / 26 Bar.g  
Tube Type/Material: EMBEDDED Fin Tubes / ASTM A334 Gr.6



Client/User: AIRFINS LTD / FS ELLIOT – QATAR  
API661 Type/Plot Plan/Weight/Design Pressure: PLUG / 5250x10500 / 15000 Kg / 4,5 Bar.g  
Tube Type/Material: EXTRUDED Fin Tubes / ASME SA249 TP.316L



Client/User: HELLENIC PETROLEUM / ASPROPYRGOS - GREECE  
API661 Type/Plot Plan/Weight/Design Pressure: COVER / 4200x10970 / 37000 KG / 9 Bar.g  
Tube Type/Material: EMBEDDED Fin Tubes / ASTM A179



Client/User: FRIGOTECNICA / OVED ZAR - ENI TUNISIA BV  
API661 Type/Plot Plan/Weight/Design Pressure: PLUG / 10800x12500 / 55000 Kg / 30 Bar.g  
Tube Type/Material: EMBEDDED Fin Tubes / ASTM A334 Gr.6



Client/User: RAFFINERIA ISAB IMPIANTI SUD PRIOLO - ITALY  
API661 Type/Plot Plan/Weight/Design Pressure: COVER / 4800x9144 / 26500 kg / 2 Bar.g  
Tube Type/Material: EMBEDDED Fin Tubes / ASTM A179



Client/User: GULF SPIC / KNPC MINA AL-AHMADI REFINERY – KUWAIT  
API661 Type/Plot Plan/Weight/Design Pressure: PLUG / 2500x4300 / 11500 Kg / 10 Bar.g  
Tube Type/Material: EMBEDDED Fin Tubes / ASME SA179



# Pressure Vessels



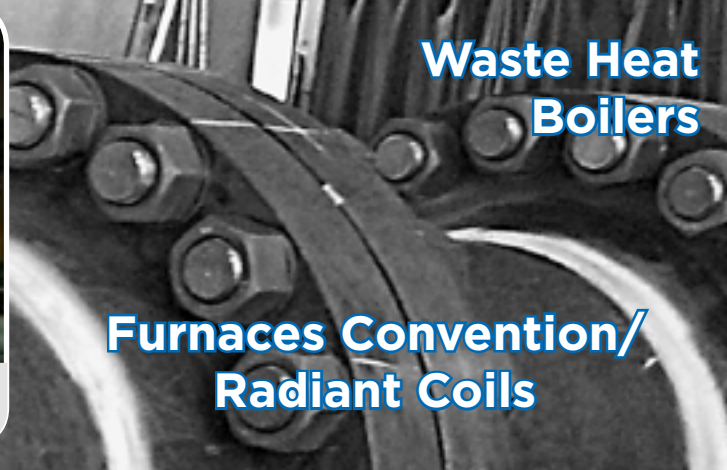
Client/User: AGIP PETROLI / PRIOLO PLANT – ITALY  
Size/Weight/Design Pressure: ID. 1400 x TL. 4000 / 3900 Kg / 10 Bar.g  
Material: ASTM A516 GR.65



Client/User: SIRTEC NIGI / K.O.C KUWAIT  
Size/Weight/Design Pressure: ID. 1600 TL.@TL. 5800 / 5800 Kg / 10 Bar.g  
Material: ASME SA240 TP.316 L



Client/User: ENI SPA / POLIMERI EUROPA RAVENNA PLANT – ITALY  
Size/Weight/Design Pressure: ID. 1400 x TL.@TL. 2200 / 2620 Kg / 17 Bar.g  
Material: ASTM A516 GR.60



## Waste Heat Boilers

## Furnaces Convention/ Radiant Coils



Client/User: IPSL LTD METHANOL HOLDING / POINT LISAS - TRINIDAD  
Size/Weight/Design Pressure: 3140x19710x4850 / 90000 Kg / 32,5 Bar.g  
Tube Tp/Mat.: Bar Tubes/ASTM A335 P11 - WELD. Fin Tubes/ASTM A335 P11 @ ASTM A 240-410



Client/User: IPSL LTD METHANOL HOLDING / POINT LISAS - TRINIDAD  
Size/Weight/Design Pressure: 2140x23185x3290 / 41200 Kg / 25,4 Bar.g  
Tube Type/Material: Bar Tubes / ASTM A335 P22



Client/User: P66 / HUMBER REFINERY – UK  
Type/Size/Weight/Design Pressure: WHB / 4256x2450 / 27700 Kg / 30,34 Bar.g  
Tube Type/Material: Bar Tubes / ASTM A192



CLIENT/ USER: ENI SPA/ SANNAZZARO DE BURGONDI -ITALY  
Size / Weight/ Design Pressure: 750x750 N° 450 Plates H.3016/13900Kg/15 Bar.g.  
PLATE TYPE AND MATERIAL: WELDED PLATE/ASTM A240 TP 316L



CLIENT/ USER: GE Oil & Gas /PETROBRAS – BRAZIL  
Size / Weight/ Design Pressure: 480x1726 N° 25 Plates / 750Kg/ 16 Bar.g.  
PLATE TYPE AND MATERIAL: GASKETED PLATE/ASTM A240 TP 316L



## Columns



Client/User: ENI SPA / SANNAZZARO DE BURGONDI - ITALY  
Size/Weight/Design Pressure: ID. 2200/1300 x TL.@TL. 23220 / 31200 Kg / 4,2 Bar.g  
Material: ASTM A516 GR.60



Client/User: ENI SPA / RAFFINERIA DI MILAZZO - ITALY  
Size/Weight/Design Pressure: ID. 1650 x TL. 8700 / 15000 Kg / 3,5 Bar.g  
Material: ASTM A516 GR.60 + A240 TP.316L



Client/User: KNPC / SHUAIBA REFINERY - KUWAIT  
Size/Weight/Design Pressure: ID. 1072/781 x TL.@TL. 28194 / 18400 kg / 9,65 Bar.g  
Material: ASME SA516 Gr.70 + SA240 TP.304L CLAD / ASME SA516 GR.70 + HASTELLOY C22 CLAD



Client/User: P66 / HUMBER REFINERY - UK  
Size/Weight/Design Pressure: ID. 1296 x TL.@ TL. 23757 / 22700 Kg / 3,4 Bar.g  
Material: ASTM A 516 GR.60 / ASTM A516 GR.60 + A240 TP.316L CLAD



Client/User: P66 / HUMBER REFINERY - UK  
Size/Weight/Design Pressure: ID. 2210 x TL.@TL. 27356 / 62500 Kg / 3,4 Bar.g  
Material: ASTM A516 GR.60 + A240 TP.316L CLAD



La società Vitherm, con sede in Grenoble (Francia) e facente parte del gruppo Vichem, ha oltre 60 anni di esperienza nella tecnologia di processo ed opera in tutto il mondo. Con un'esperienza ormai consolidata, può essere considerata leader mondiale nella progettazione, produzione, applicazione, commercializzazione e vendita di scambiatori di calore a piastre.

Vitherm ha sviluppato e possiede alcune delle tecnologie più avanzate del mondo supportata da un team di esperti, una rete di distributori globalizzati e con centri di assistenza in Sud America, Europa, Asia e Africa, nonché impianti di produzione in Europa e in Asia.

Vitherm offre una soluzione per ogni esigenza di processo dei propri clienti, attraverso un'ampia gamma di scambiatori di calore progettati per durare a lungo nel tempo riducendo al minimo ogni attività di manutenzione.

I prodotti principali sono costituiti da:

- Weldpack® Scambiatore a piastre saldate
- Flowpack® Scambiatore a piastre con guarnizioni

Vitherm ha sviluppato la nuova generazione di scambiatori a piastre saldate Weldpack® apportando notevoli miglioramenti che includono:

- Apparecchiature ad alta resistenza meccanica attraverso una colonna di alloggiamento delle piastre che permette di evitare trafilamenti negli angoli
- Capacità di resistenza ad alta pressione, fino a 50 bar, e a variazioni ampie di pressione.
- Saldature delle piastre completamente in automatico senza nessun intervento manuale.

Tutta la costruzione saldata del modello Weldpack® elimina la necessità di guarnizioni, migliora l'affidabilità, riduce i costi di installazione e di manutenzione.

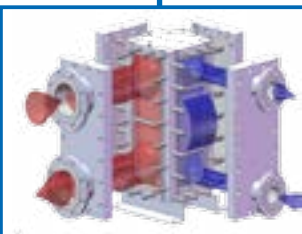
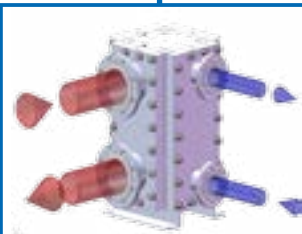
Vitherm offre una vasta gamma di tutte le parti di ricambio, tra cui piatti e guarnizioni per tutte le marche di scambiatori di calore.

#### MATERIALI DELLE GUARNIZIONI:

- Nitrile
- EPDM
- Viton
- Neoprene
- Hypalon
- Altri materiali a richiesta

#### MATERIALI DELLE PIASTRE SCAMBIATORE

- SS 304, 316, 316L
- Titanium
- Nickel 200
- HASTELLOY® C-276, C-22, B-2
- AVESTA® 254-SMO
- Altri materiali a richiesta



## YOUR "ONE SHOP STOP SUPPLIER"

Vitherm a French Company located in the Grenoble area, as a part of Vichem group, has over 60 years expertise in process technology across the globe. Vitherm has a strong heritage to be the world leader in design, production, application, marketing and sales of industrial plate heat exchangers.

Vitherm boasts some of the world's most advanced technology supported by a world wide team of experts and distributors with service centres in South America, Europe, Asia and Africa as well as manufacturing facilities in Europe and Asia.

Vitherm offers a solution in order to meet our customer's process requirements and the needs of any standards products, which are designed for extensive, low maintenance lifetimes with easy access for regular servicing.

Our main product line consists of:

- Weldpack® Welded - plate heat exchangers
- Flowpack® Plate and gasket heat exchangers

Vitherm has developed the newest generation of welded plate heat exchangers, known as Weldpack®. The improvements compared to previous generations, include:

- enhancing mechanical strength of the equipment through a stronger column liner thus avoiding leakage in the corners
- capability higher pressures (50 bar) and wider pressure variations
- Fully robotized welding without manual welding on the plate pack

Weldpack® fabrication technology eliminates the need for gaskets, improves reliability, reduces installation and maintenance costs.

Vitherm provides a wide range of complete spares including plates and gaskets for all trades of heat exchangers.

#### Material of Gaskets:

- Nitrile
- EPDM
- Viton
- Neoprene
- Hypalon
- Others on demand

#### Materials of Pressure Plates:

- SS 304, 316, 316 L
- TITANIUM
- Nickel 200
- HASTELLOY C-276-C-22, B-2
- AVESTA 254-SMO
- Others on demand





**ITALY**

Head Quarter  
& Shop

Saudi  
Arabia

Russian  
Federation

Qatar

Japan

Houston

Marocco

Algery

**METALLURGICA MEDOLAGO  
REPRESENTATIVES**

Trinidad

Tunisia

Libya

Egypt

Kuwait

U.A.E.

Malaysia

Indonesia





# THE METALLURGICA MEDOLAGO ENTERPRISE

**Metallurgica Medolago  
STRATEGIC PARTNER**



**Metallurgica Medolago  
GROUP**



**S.M. srl  
FINNED TUBES**



**Cerebrum  
R&D**

**DIECI-9™**

**DIECI-9  
Cycling & Sports**





Printed in Feb 2015 - ED. I

MM Metallurgica Medolago ©

All images are property of MM Metallurgica Medolago srl  
except for Front Building Images property of Marcello Mariana  
Graphic Project, Develop and Print By Graffidea.it



Browse to the website



Get Connected

**M.M. Metallurgica Medolago s.r.l.**

via Carso, 69 - 24040 MADONE (BG)  
Tel: 035 99 22 22 - Fax: 035 99 59 49

[info@metalmed.it](mailto:info@metalmed.it) - [www.metalmed.it](http://www.metalmed.it)