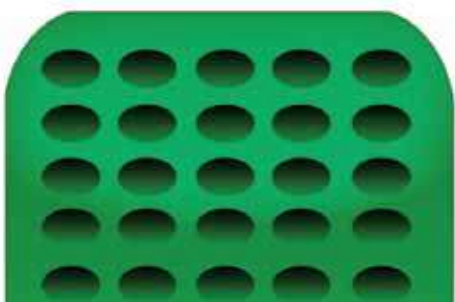




**TECTUBI RACCORDI S.p.A**



**BUTTWELDING FITTINGS  
CLAD FITTINGS  
HOT INDUCTION & COLD BENDING  
SPECIAL PRODUCTS**





**TECTUBI  
RACCORDI**  
Manufacturing





## Company profile

Founded in 1954 and incorporated into **Allied International Group** in 2003, **Tectubi Raccordi** was the first Italian world-leading manufacturer of steel butt-welding pipe fittings to be used in nuclear and thermal power plants, LNG plants, oil&gas and water pipelines, offshore & subsea and petrochemical plants. It is a top supplier of superpipes for the nuclear sector.

For over half a century the company has been collaborating with the most important EPC companies, offering its products at the highest quality and manufacturing standards. Its workers' craftsmanship and experience and its technical service is key to meeting any client's request in terms of materials, design and international specifications.

During recent years, **Tectubi Raccordi** has developed three major facilities: in Castel San Giovanni, Piacenza, Italy; Carbonara Scrivia, Alessandria, Italy and Tianjin, China, so as to increase penetration in all target markets.



## Company details

**Company Name**  
TECTUBI RACCORDI S.p.A.

**Registered Office**  
Via Roma, 150  
29027 Podenzano  
(Piacenza), Italy

**Chamber of Commerce**  
REA/PC 157708

**Paid Capital**  
Euro 5,160,000.00

**VAT No.**  
IT 01230470997

**Sales Office & Administration**  
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29027 Podenzano  
(Piacenza), Italy

**Plants**  
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29027 Podenzano  
(Piacenza), Italy

Via Emilia Pavese, 34/A  
Località Campo d'Oro  
29015 Castel San Giovanni  
(Piacenza), Italy

Via Ancona, 27  
29010 Calendasco  
(Piacenza), Italy

Corso Genova, 4  
ex S.S. 35 dei Giovi km 64  
15050 Carbonara Scrivia  
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## Products & target markets

**Tectubi Raccordi** produces a wide range of fittings, such as elbows, tees, reducers, caps, bends and many others from 1/2" to 120" diameter in all material grades, according to international standards and clients' requirements.

The target markets of **Tectubi Raccordi** can be divided into up/mid/downstream, which include onshore and offshore/subsea plants, oil&gas pipelines, refineries, and power generation such as nuclear and thermal power plants. **Tectubi Raccordi** manages the whole cycle of production, distribution and aftersales services in all these markets.

EPC companies represent the largest part of its capacity.

Close co-operation with clients gives the company the opportunity to develop the market and the products in line with trends in the field of energy.



## Standard fittings

TYPE OF PRODUCT	DIMENSIONS	STEELS	EXECUTION
Elbows	Up to 120"	All grades	Seamless and welded (cold formed, hot formed and by mandrel)
Equal and reducing tees	Up to 120"	All grades	Seamless and welded (cold formed and hot formed)
Concentric and eccentric reducers	Up to 120"	All grades	Seamless and welded (cold formed and hot formed)
Caps	Up to 120"	All grades	Seamless (cold formed and hot formed)

## Special fittings

TYPE OF PRODUCT	DIMENSIONS	STEELS	EXECUTION
Reducing elbows	Up to 60"	All grades	Seamless and welded
Special radius bends (3D)	Up to 56"	All grades	Seamless and welded segmentable
Special radius bends (2,5D 3D 4D 5D 7D 10D 18D)	Up to 60"	All grades	Seamless and welded (hot induction and cold formed)
Barred tees	Up to 120"	All grades	Seamless and welded (cold formed and hot formed)
Special flow tees	Up to 120"	All grades	Seamless and welded
Equal and reducing crosses	Up to 120"	All grades	Seamless and welded
Equal and reducing laterals	Up to 120"	All grades	Seamless and welded

## Special products

TYPE OF PRODUCT	DIMENSIONS	STEELS	EXECUTION
Headers and extruded manifolds	Up to 120"	All grades	Seamless and welded
Split tees	Up to 120"	All grades	Seamless and welded
"Y" pieces	Up to 120"	All grades	Seamless and welded

## Special products as per customer's drawing

## Materials used and related International Standards

### CARBON AND ALLOY STEEL FOR ROOM, MODERATE AND ELEVATED TEMPERATURES

#### **ASTM / ASME A/SA 106**

##### **API 5L:**

Gr.B - Gr.C

#### **ASTM / ASME A/SA 335:**

Gr.1 - Gr.11 - Gr.12 - Gr.5

Gr.22 - Gr.9 - Gr.91

#### **ASTM / ASME A234:** WPB

WPC - WP1 - WP11 - WP12

WP5 - WP22 - WP9 - WP91

WP92

#### **EN 10216-2:** P195GH

P235GH - P265GH

20MnNb6 - 16Mo3 - 8MoB5

4 - 14MoV63

10CrMo5-5 - 13CrMo4-5

10CrMo9-10

15NiCuMoNb5-6-4

X11CrMo5 - X11CrMo9-1

X10CrMoVNb9-1

X10CrWMoVNb9-2

X20CrMoV11-1 and

equivalent grades

#### **EN 10253-1 EN 10253-2**

##### **RCC-M:** CL2 - CL3 - NC

grades P265GH - P280GH

P295GH - P355NH - TU42C

AE250B1 (other grades can

be supplied upon request).

### CARBON AND ALLOY STEEL FOR LOW TEMPERATURE SERVICE

#### **ASTM / ASME A/SA 333:** Gr.

6, Gr. 3, Gr. 8 and equivalent

grades

#### **ASTM / ASME A/SA 420**

**WPL6 - WPL3**

### STAINLESS STEEL

#### **ASTM / ASME A/SA 312:**

TP304 - TP304L - TP304H

TP304LN - TP304N

TP316 - TP316L - TP316H

TP316LN - TP316N - TP317

TP317L - TP321H - TP347

TP347H - S31254 and

equivalent grades

#### **ASTM / ASME A/SA 403:**

WP304 - WP304L - WP304H

WP304LN - WP304N

WP316 - WP316L - WP316H

WP316LN - WP316N

WP317 - WP317L - WP321

WP321H - WP347

WP347H - WPS31254

#### **RCC-M:** CL1 - CL2 - CL3

grades Z2CND17.12

Z2CN18.10 - Z2CND18.12N

(other grades can be

supplied upon request)

#### **ASTM A774:** TP304L

TP316L TP317L - TP321

TP347

#### **Equivalent grades of EN**

**10253-3 EN 10253-4** (former

AFNOR-DIN-BS equivalent

grades).

### COPPER ALLOY

#### **Copper-nickel ASTM /**

**ASME B/SB 466:** UNS

C70600 (CuNi 90/10)

UNS C71500 (CuNi 70/30)

and equivalent grades.

### TITANIUM ALLOY

#### **ASTM / ASME B/SB363:**

WPT2 - WPT12

and equivalent grades

### HIGH YIELD STEEL FOR PIPELINE AND OFFSHORE

#### **API 5L:** Gr. X42 - X46 - X52

X60 - X65 - X70 - X80

#### **EN 10208-2:** L245NB

L290NB - L360NB - L415NB

L360QB - L415QB - L450QB

L485QB - L555QB - L360MB

L415MB - L450MB

L485MB and equivalent

grades

#### **ASTM A860/MSS-SP75:**

WPHY 42 WPHY 46 - WPHY

52 - WPHY 60 - WPHY 65

WPHY 70 grades - WPHY 80

only as per MSS-SP75

### AUSTENITIC/FERRITIC

### STAINLESS STEEL

#### **ASTM / ASME A/SA 790:**

UNS 31803 (duplex) - UNS

32750 (superduplex)

UNS 32760 (superduplex)

UNS 32550

(superduplex) and equivalent

grades

#### **ASTM / ASME A/SA 815:**

UNS 31803 (duplex)

### NICKEL ALLOY

#### **ASTM / ASME B/SB 366:**

UNS N04400 - UNS N06600

UNS N06625 - UNS N08020

UNS N08800 - UNS N08811

UNS N08825 - UNS N10276

and equivalent grades.

## Design codes

ASME B31.1 - ASME B31.3

ASME B31.4 - ASME B31.8

EN 13445 - 13480 - 12952

(former BS PD 5500

Swedish ordinance AFS

1994:39)

DIN 2413 - TRD301

AD 2000 Merkblatt B2-B3-B9

STOOMWEZEN rules for

pressure vessels

## Manufacturing Standards

ASME B16.9 - ASME B16.25

MSS-SP43 - MSS-SP75

DIN 2605 - 2606 - 2615

2616 - 2617 - BS 1640

GOST 17374 - 17375

17376 - 17377 - 17378

17379 - 17380





## Tectubi Raccordi network

**Tectubi Raccordi** has its headquarters and main plant in Podenzano (total area 59,000 sq m), a technologically advanced plant in Castel San Giovanni (total area 251,000 sq m) and a factory in Calendasco (total area 8,800 sq m), all in the province of Piacenza, Italy.

- From December 2017, **OMP-Tectubi Raccordi S.R.L.** was merged by incorporation into **Tectubi Raccordi S.p.A.** This facility (total area 50,000 sq m) produces seamless and welded large-radius bends by hot induction and cold bending.

Other production units in Italy and in China complete the complete and increase the product range:

- **Gieminox-Tectubi Raccordi Welded Pipes Division** in Schio, Vicenza, Italy, which produces heavy wall welded pipes, longitudinally welded clad pipes, bi-metal lined pipes.
- **Tectubi Tianjin Fittings** in Tianjin, China, which produces seamless and welded elbows, seamless and welded tees, caps, barred tees and special products.



Above: the cold forming machine in the Podenzano plant for the production of tees up to 16"  
Below: the cold bending machine in the Calendasco plant for the production of elbows up to 16"





Above: some processing phases of large tee fittings  
Below: hot elbows in the large cooling tank during the heat treatment process



## The Tectubi Raccordi factory in Castel San Giovanni

This plant, built in recent years, is situated in Castel San Giovanni, Piacenza, Italy, and occupies an area of 251,000 sq m. It is dedicated to the production of seamless and welded mandrel elbows in carbon and alloy steel up to 56", reducing elbows up to 24" and all kinds of large size fittings up to 120" with a yearly capacity of 30,000 tonnes.

A mandrel machine, with a length of 66.5 m, width of 7 m and the max. working force of 1,800 tonnes, is aimed at increasing production capacity by 60%. Unique in Europe, and probably in the world, this machine is able to deform a tube of 13 meters and to produce elbows with a diameter up to 56" and a wall thickness of 2", with a heating capacity of 850° for 11.5 tonnes of material per hour.

The factory brings together aspects of industrial development, environmental protection and enhancement of the local community, accompanied by constant research and innovation.



*The large-dimension induction mandrel and bending machine MTC 1800 installed in the factory of Castel San Giovanni. Capable of unequalled production and a wide range of performances.*



Two large furnaces outside and inside the plant



Gas mandrel and bending machine MTC 450

## Certifications (Bending Division included)

- ABSA - Alberta Statutory Declaration
- AD 2000 MERKBLATT W0 and HP0 by TÜV NORD
- ASME Quality System Certificate as a Material Organization  
ASME SECTION III NCA 3800 Certificate No. QSC - 603
- BUREAU VERITAS ISO / CEI 17025 audit attestation
- CUSTOM UNION Certificate TRTS 32/2013
- ISO 14001:2004 by SWISO
- ISO 14001: 2015 by QS International
- ISO 9001:2015 by Bureau Veritas
- KTA 1401 Areva by TÜV NORD
- NNSA - Confirmation Certificate of Foreign Organization's  
Registration for Civil Nuclear Safety Equipment Activities in  
the People's Republic of China
- NORSOK M-650

- OHSAS 18001:2007 by QS International
- PED 4.3 by Bureau Veritas

In addition to these Certifications, issued by public entities and organizations, **Tectubi Raccordi** has Approvals issued by private and public companies, such as: **ADNOC, BP, Chevron, EDF-UTO, EIL, ENI, Gas de France, Gazprom, KNPC, KOC, National Grid, NCOC, NTPC, ONGC, Open Grid Europe, PDO, PG & E, Qatar Gas, QP, Saudi Aramco, Shell, SNAM Rete Gas, Total, TransCanada.**





**TECTUBI  
RACCORDI**  
Bending Division





## Bending division history

**Tectubi Raccordi** formed a newco with **OMP Mongiardino** in November 2009, called **OMP Mongiardino-Tectubi Raccordi Bending Division**. Founded in 1968, **OMP Mongiardino** was the first Italian company to manufacture by hot induction and cold bending large-radius elbows for oil&gas pipelines and several types of industrial or civil plant.

It has created an industrial hub in Carbonara Scrivia, Alessandria, Italy, with a total area of 50,000 sq m, and has transferred there all the equipment from the former plant in Genoa.

In April 2016 **Tectubi Raccordi** completed its acquisition of **OMP Mongiardino** and the name of the company changed to **OMP-Tectubi Raccordi S.R.L.**; finally, from December 2017, **OMP-Tectubi Raccordi S.R.L.** was merged by incorporation into **Tectubi Raccordi S.p.A.**

The quality management system covers the full manufacturing process, from the arrival of the mother pipes to delivery of the finished bends, and allows constant updating and traceability.



## Products & target markets

**Tectubi Raccordi Bending Division** produces large-radius bends by hot and cold bending and clad bends. Both hot and cold bending processes are used for: carbon and alloy steel for moderate and elevated temperatures; high yield steel; carbon and alloy steel for low temperature service; stainless steel; austenitic/ferritic stainless steel; nickel alloy; titanium alloy and aluminum alloy.

The cold bending method, which originated from registered industrial patent used exclusively by the company, delivers an identical structure to that of the original tube, so the product does not need further heat treatment when the mechanical characteristics comply.

The bends are intended mostly for the oil&gas pipeline and power sectors, and can also be used for civil engineering works.

# TECTUBI RACCORDI Bending Division

## Cold bending

The company's patented cold bending process enables the manufacture of a wide range of products such as bends with radius exceeding 4D and angles up to 180°, with a minimal thickness reduction.

The bends can be in carbon steel, alloy steel, stainless steel, duplex and titanium, welded (SAW or ERW) or seamless, with diameters ranging from 2" to 60".





## Hot bending

The company has increased its capacity with the purchase of a new induction bending machine, Schäfer SRBMI 1400. This machine enables the production of bends of diameter from 2" to 60", bending radius from 250 mm to 10,000 mm and thickness from 7 mm to 100 mm.

The machines, electronically interfaced, are provided with a control system which enables them to adapt to variations in load, while keeping control over the temperature, reducing heat losses to a minimum. The material properties are retained accordingly, even after the bending and heat treatment process, in accordance with applicable specifications.

## Characteristics

MACHINE	COJAFEX PB 600	COJAFEX PB 1000	SCHÄFER SRBMI 1400
Bending radius	250 ÷ 3,050 mm	800 ÷ 5,100 mm	686 ÷ 10,000 mm
Diameter	2" ÷ 24"	8" ÷ 36"	8" ÷ 60"
Development	5,000 mm MAX	8,500 mm MAX	11,500 mm MAX
Pipe length	8,400 mm MAX	12,000 mm MAX	15,400 mm MAX
Wall thickness	7,100 mm	7,100 mm	7,100 mm

## Clad induction bends

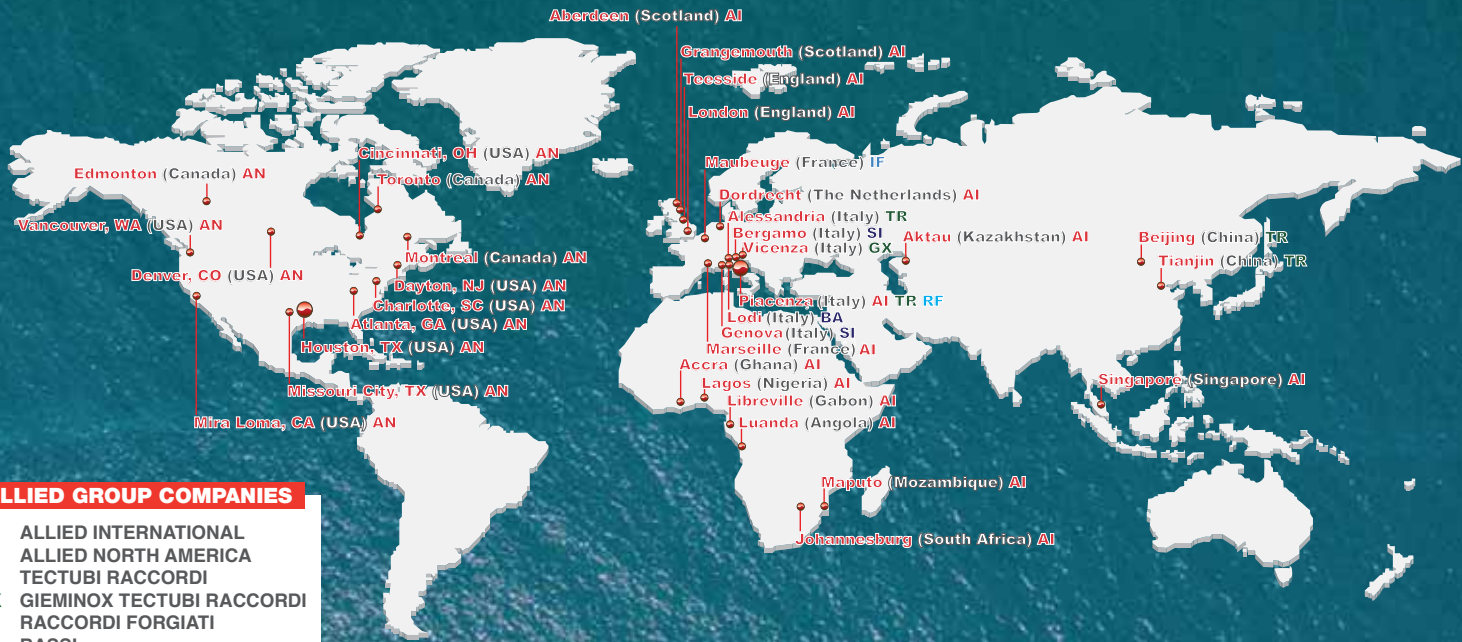
**Tectubi Raccordi Bending Division** manufactures a wide range of clad induction bends for applications under the most demanding conditions and services. All bends with  $R/D < 4$  are offered as hot induction bends, whereas for  $R/D \geq 4$ , **Tectubi Raccordi** offers cold formed bends as an alternative to hot ones.

## Certifications

Bending Division certifications are included in those of **Tectubi Raccordi** (see p. 23).



# ALLIED IN THE WORLD



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<b>RF</b>	RACCORDI FORGIATI
<b>BA</b>	BASSI
<b>SI</b>	SIMAS
<b>IF</b>	INTERFIT



ALLIED GROUP

*The fitting choice worldwide*

## TECTUBI RACCORDI S.P.A.

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TECTUBI RACCORDI S.p.A

*Tectubi Raccordi S.p.A. is part of Allied International Group*