

**Metalfer** 







Finarvedi SpA


CARBON STEEL


**Acciaieria Arvedi** 

**Arvedi Tubi Acciaio** 

**CSI** Centro Siderurgico Industriale


**Metalfer** 

 Centro Siderurgico Adriatico


**Metalfer Poland** 


**Euro-Trade**

**Metalfer Morocco**

**Arvedi Metalfer Brasil** 


STAINLESS STEEL

**Arvedi AST** 


**iltainox** 


**Arinox** 

**SDF** 

**Terninox** 

**AST Deutschland** 

**AST Turkey** 

**Tubificio di Terni** 



**METALFER**, the Italian steel group leader in the production of welded cold drawn tubes, ranging from 8 mm to 235 mm outer diameter, has achieved the highest levels of product quality recognized by customers the world over.

**METALFER** has the know-how needed to produce high quality products to the most critical customer requirements.

This enhances the competitiveness of the company and its customers.

With an annual production of 105,000 metric tons of cold drawn, skived/roller burnished and honed tubes including over 80 million cut pieces, takes place in 6 plants located in 4 countries.

# METALFER IN THE WORLD

The exclusive know how needed to produce quality is carefully designed to reduce costs. This enhances the competitiveness of the company and of its customers.

Metalfer's manufacturing capabilities and technical competencies helps it stand out among its peers as an industry leader.

With an annual production of 105,000 metric tons of welded cold drawn tubes and 20,000 metric tons of cut pieces, Metalfer produces in 6 facilities located in Italy, Poland, Brazil and Morocco.



## ITALY

- Roè Volciano (Brescia)
- Corbetta (Milano)
- Avigliana (Torino)



## POLAND

- Bielsko-Biala (Kraków)



## BRAZIL

- Salto (São Paulo)



## MOROCCO

- Tangier



## **METALFER**

### **COLD DRAWN**

**METALFER**  
Roè Volciano plant

**METALFER**  
Corbetta plant

**ARVEDI METALFER**  
do **BRASIL**  
Indaiatuba plant

### **ADDED VALUE**

**METALFER AUTOMOTIVE**  
tube cutting

**METALFER POLONIA**  
tube cutting

**METALFER MOROCCO**  
tube cutting

**METALFER (Corbetta)**  
skived and roller burnishing  
and honing



## ROE' VOLCIANO ITALY

The plant, next to Salò on Garda Lake, is the group's headquarter, specializing in cold drawn tubes of external diameter between 8 mm and 235 mm, with a maximum wall thickness of 15 mm and with an annual production of over 45,000 metric tons.

Metalfer has over 50 years of experience serving demanding customers in the automotive, fluid power and industrial equipment sectors providing welded cold drawn tubes, "ready to use", fit to be skived, skived and roller burnished and honed material.

Meeting exacting surface and dimensional requirements is made possible by a fully integrated production process that transforms molten scrap into down stream value added DOM tubing products. Thus, resulting in a reliable business partner that can react to customer quality and delivery needs.





# CORBETTA ITALY

The Corbetta plant is located near Milan, specializing in cold drawn tubes of external diameter between 20 mm and 180 mm, with a maximum wall thickness of 10 mm and with an annual production of over 35,000 metric tons.

The plant is also specialised in the production of skived and roller burnished tubes, with a wide dimensional range.

The production plants of Roè Volciano and Corbetta are fully interchangeable, allowing METALFER to be very flexible in responding to customer delivery needs.





## AVIGLIANA ITALY

The Avigliana plant is located near Turin. It is a cutting and forming operation.

Tubes are cut and chamfered with outer diameters of 10mm to 120mm and lengths up to 1,500mm.

Tubes can be cut and deburred with outer diameters up to 250mm and lengths over 3,000mm.

Production focuses on the needs of automotive customers in Western and Southern Europe.







## **BIELSKO BIALA POLAND**

The Bielsko Biala plant is located 80 Km from Krakow, Poland. It is a cutting and forming operation.

Tubes are cut and chamfered with outer diameters of 10mm to 120mm and lengths of up to 1,500mm.

Tubes can be cut and deburred with outer diameters up to 250mm and lengths over 3,000mm.

Production focuses on the needs of customers in Eastern and Northern Europe.





## TANGIER MOROCCO

The Tangier plant is located near Tangier in Tangier Automotive City. It is a cutting and forming operation.

Tubes are cut and chamfered with outer diameters of 10mm to 120mm and lengths up to 1,500mm.

Production focuses on the needs of automotive customers in Africa, the Americas, and Southern and Western Europe.





## **SALTO** BRAZIL

The Salto plant is located near Campinas, Brazil. It welds and cold draws tubes with outer diameters of 20mm to 215mm and maximum wall thickness of 10mm.

Cut to length services are also provided.

Annual production is approximately 18,000 metric tons.

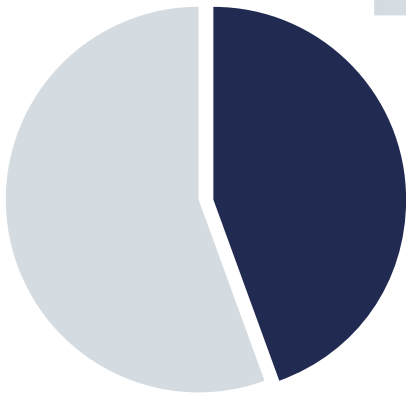
Production focuses on the needs of automotive and fluid power customers in South and North America.





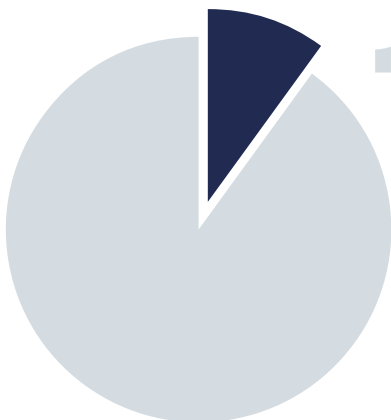
## 50% AUTOMOTIVE

**The automotive sector makes up 50% of Metalfer's production.** With over 50 years of experience, Metalfer is considered a leading supplier to automotive manufacturers the world over.



## 40% CYLINDERS

**The fluid power sector makes up 40% of Metalfer's production.** Superior surface finishes that includes special smooth interior diameter (SSID) or "ready to use" (H9), skived and roller burnished (H8), and honed tubing; along with tight dimensional tolerances has earned Metalfer the reputation of the "go - to" supplier from the most demanding customers on 4 continents.



## 10% INDUSTRIAL

**The industrial sector makes up the remaining 10% of Metalfer's production.** A wide range of dimensions, surface finishes, and tight tolerances of its cold drawn tubing places Metalfer in a leading position for the supply of precision steel tubing.



# Dimensional chart for welded cold drawn tubes for mechanical application

OD mm	WALL THICKNESS mm																							
	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12.5	
ID TOLERANCE RANGES																								
8																								
10																								
12																								
14																								
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220																								
230																								
240																								

Table (1) for tubes with required delivery condition +C e +LC; for tubes with delivery condition +A, +SR and +N, the tolerance ranges noted in the table must be multiplied by the numbers noted in the following table (2)

Ratio WT/OD	The tolerances noted in the table above must be multiplied by the following factors
$\geq 0.05$	1
$0.025 \leq \text{WT/OD} < 0.05$	1.5
$< 0.025$	2

# Metalfer: Automotive

In addition to steel grades of the EN 10305-2 standard, microalloy steel grades 26MnB5 – 28Mn6 – 34MnB5 may also be supplied.

## **STEEL GRADES:**

E235 - E275 - E355

## **CONDITIONS OF SUPPLYING:**

Welded tubes cold drawn in reactive oil (+C and +LC). Random lengths from 5 to 7 m plain ends or fixed lengths.

## **TOLERANCES:**

Outside diameter:  $\pm 0.04$  mm

Inside diameter: on request

Ra < 0.4  $\mu$ m

## **TESTS:**

Visual and dimensional inspections, roughness test, mechanical tests, chemical analysis, non destructive tests.





# Metalfer: Cylinders

## STEEL GRADES:

E355

## CONDITIONS OF SUPPLYING:

+C - +SR

## TOLERANCES:

H9

H8

Stock allowance in accordance to the customers' requirements

## TESTS:

Visual and dimensional inspections, roughness test, mechanical tests, chemical analysis, non destructive tests.







# Dimensional chart for welded/seamless cold drawn tubes for cylinders H8

OD mm	WALL THICKNESS mm - FINISHED INSIDE H8									
	5	6	7.5	10	12.5	15	17.5	20	22.5	25
35										
40										
45										
50										
60										
65										
70										
75										
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230										
235										
240										
245										
250										
270										
280										
300										

**According to the standard:**

EN 10305-2 / 1

**Steel grade:** E355

**Delivery condition:** +SR

**ID tolerance H8**

**Mechanical properties:**

Rm > 580 N/mm<sup>2</sup>;

Rs > 520 N/mm<sup>2</sup>;

Ap<sub>5</sub> > 15%

Ra < 0.25 μm, Rt < 1.6 μm

**Tests:** visual, dimensional,

mechanical tests and

chemical analysis,

ultrasound check 100%

# Dimensional chart for welded cold drawn tubes for cylinders ready to use



OD mm	WALL THICKNESS mm																			
	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	10	10.5	11	11.5	12
30																				
40																				
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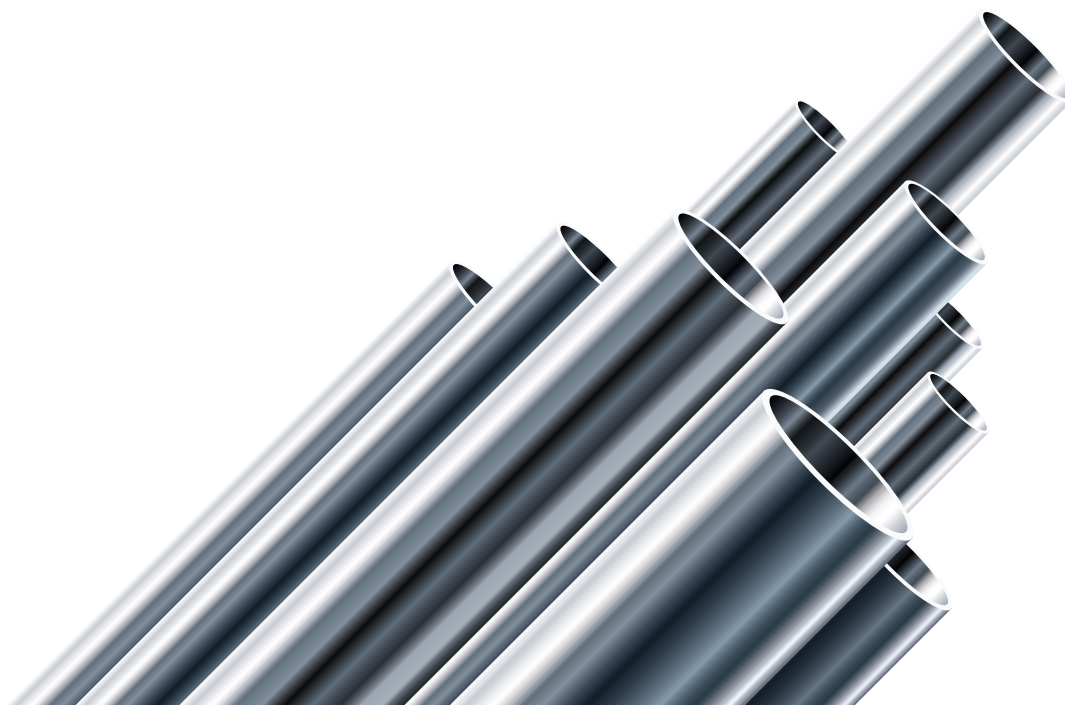
 Pneumatic cylinders H10

 Oil pressure cylinders H9

**According to the standard:**  
EN 10305-2  
**Steel grade:** E355  
**Delivery condition:** +C  
**ID tolerance range:**  
according with ISO H

**Roughness on the ID:**  
Ra < 0.8 µm  
**Mechanical properties:**  
Rm > 640 N/mm<sup>2</sup>;  
Rs > 512 N/mm<sup>2</sup>;  
Ap5 > 4%

**Tests:** visual, dimensional, mechanical tests and chemical analysis, ultrasound check 100%



# Steel Range



Steel grade	+C		+LC		+SR			+A		+N		
	R <sub>m</sub> min N/mm <sup>2</sup>	A(%)	R <sub>m</sub> min N/mm <sup>2</sup>	A	R <sub>eh</sub> min N/mm <sup>2</sup>	R <sub>eh</sub> min N/mm <sup>2</sup>	A	R <sub>m</sub> min N/mm <sup>2</sup>	A	R <sub>eh</sub> min N/mm <sup>2</sup>	R <sub>m</sub> N/mm <sup>2</sup>	A
E195	420	6	370	10	260	370	18	290	28	195	300÷440	28
E235	490	6	440	10	325	440	14	315	25	235	340÷480	25
E275	560	5	510	8	375	510	12	390	21	275	410÷550	21
E355	640	4	590	6	435	590	10	450	22	355	490÷630	22
25CrMo4	830	5	780	8	740	800	13	330	23	380	510÷660	23
26MnB5	780	7	720	9	650	750	15	310	25	360	550÷680	25
28Mn6	800	6	740	8	700	800	13	330	24	380	580÷690	24
34MnB5	820	6	770	8	710	820	12	350	23	400	610÷730	23

In addition to the steel grades noted above, it is possible to produce customized steel grades on request.





# Metalfer

## R&D CERTIFICATIONS

Metalfer's philosophy is founded on a deeply qualitative culture which extends to all company sectors.

Our certifications – ISO 14001, UNI ISO 9001 and IATF 16949 – have been obtained since many years, and while they are obviously essential requirements for operating in the sophisticated automotive sector, for Metalfer they represent just one part of the company's culture and outlook.

Staff training is deeply influenced by the complete knowledge of the end use of the tube, taking into account the related problems and the extra skills required in order to excel in each product application.

This is Metalfer's winning factor.

Major investments made over the years have enabled us to reach these objectives.

A computer network covers all company sectors, giving the entire group a single, unique interface that's able to give fast, efficient and productive answers, guaranteeing the complete traceability and certification.



# CONTACTS

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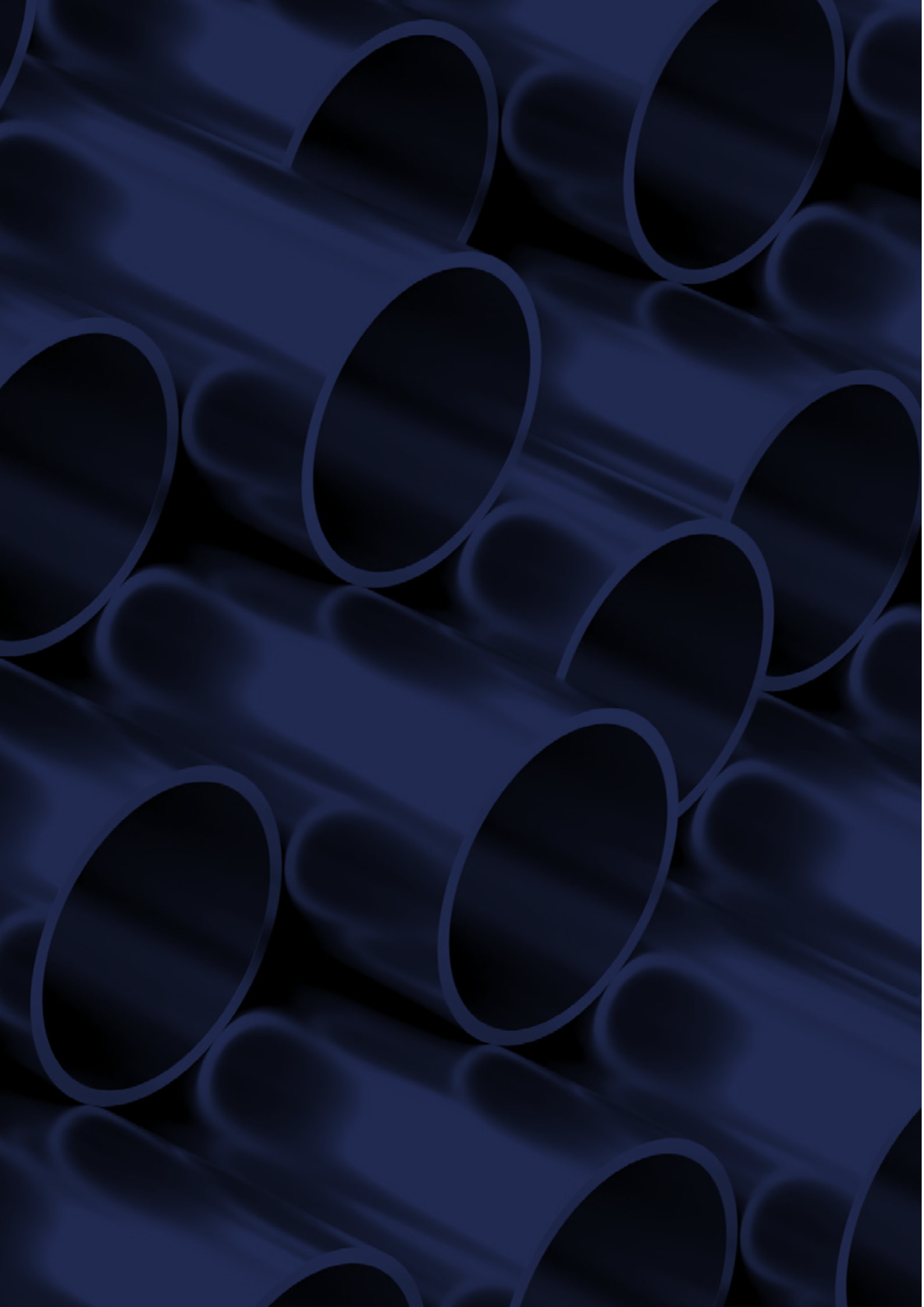
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