



FROM MICRON TO TON EVERYTHING IS UNDER CONTROL

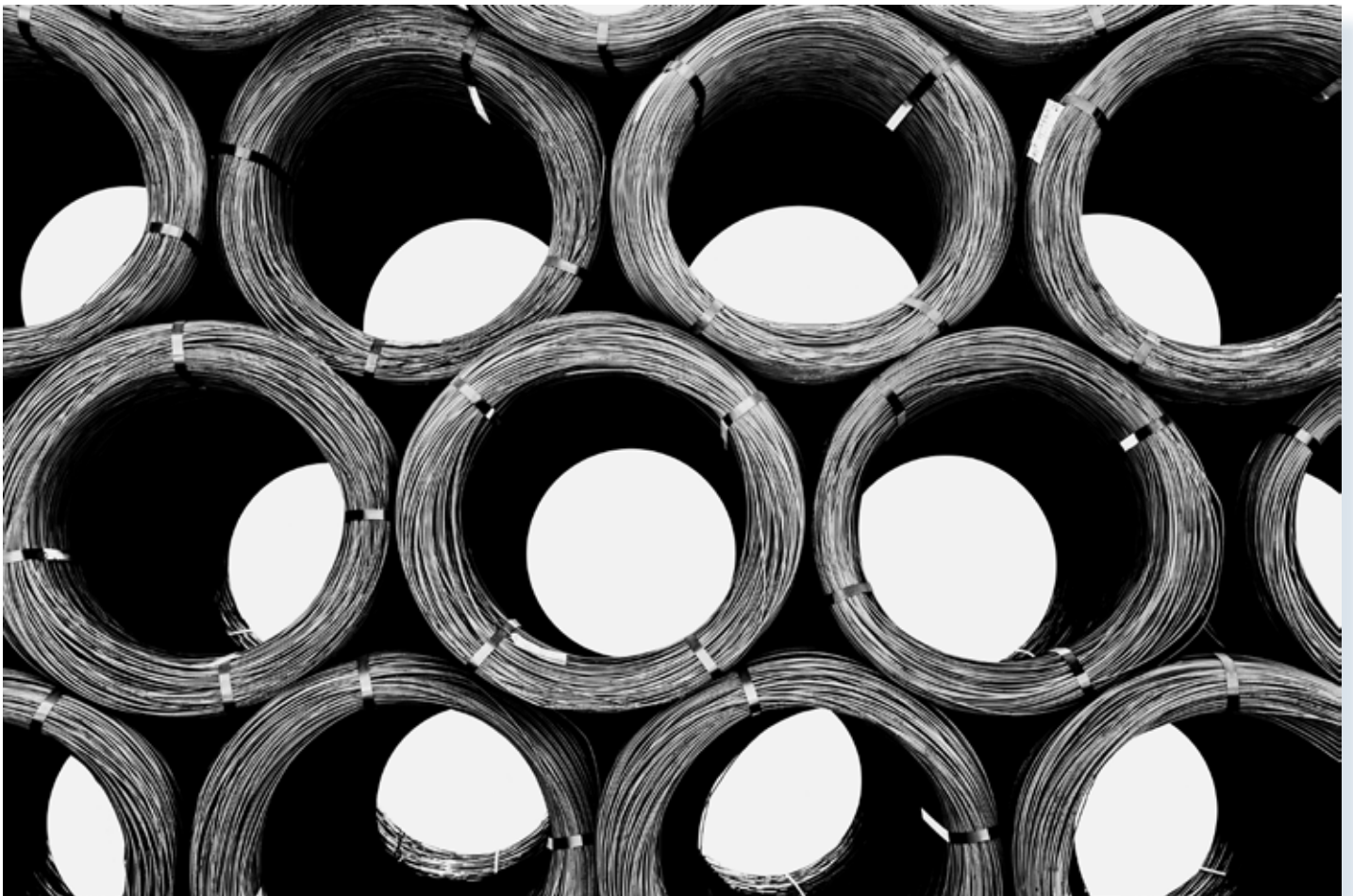
SHAPE AND CONTENT OF STEEL

We at Trafileries San Paolo drawn steel wire coils raw, annealed phosphate coated in a range of diameters from 2,00 to 42,00 mm.

We supply the main cold heading companies in Europe producing fasteners and special items: they use our steel qualities for the manufacturing of low resistance screws, self-tapping screws and medium and high resistance bolts and nuts or special fastening components.

We have been in this market since 1966 and therefore customers can look at us as reliable supplier in terms of quality and service as well as in terms of availability to find all possible solutions to improve production and quality of cold heading technologies.

**OUR WORK WITH OUR CUSTOMER HAS A GOAL:
GIVE SHAPE TO YOUR PRODUCT AND GIVE VALUE TO YOUR JOB.**



QUALITY AND SERVICES IN OUR PRODUCTS

E.g. "From micron to ton, everything is under control": every steel transformed by Trafilerie San Paolo drawing mill is constantly checked by a quality guarantee service, based on a state-of-the-art laboratory, equipped for the process and finished products control, in compliance with UNI EN ISO 9001:2008 rule and with ISO/TS 16949:2009 technical specification for automotive field. At the same time, Trafilerie San Paolo drawing mill satisfy, through the internal procedure, the environmental management, in accordance to ISO rule series 14000, and health and safety on working places as per BS8800 rules. The commercial services and the raw materials stockyard are structured to absolve any customers service request in terms of productive flexibility and end products finishing.

CERTIFICATO CERTIFICATE
IGQ 9104

Si certifica che il sistema di gestione qualità di:
We hereby certify that the quality management system operated by:

Trafilerie San Paolo Srl

Via C. F. Borromeo, 29
22036 Erba - C.P. 146 Erba Centro CO

è conforme alla norma e ai requisiti dello schema:
is in compliance with the standard and the scheme requirements:

ISO/TS 16949:2009

per le seguenti attività:
for the following activities:

IAF: 17

Fabbricazione di trafilati, laminati e pelati in acciaio, crudi o ricotti, in rotoli e barre principalmente destinati alla produzione di particolari deformati a freddo per applicazioni nell'industria automobilistica

Manufacture of cold drawn, hot rolled and peeled steel products, in coils and bars, crude or annealed, destined mainly for production of cold formed parts for applications in the automotive industry

Esempio testo valido in accordo alle "Regole per lo schema di certificazione ISO/TS 16949:2009 - Quarta edizione 01-10-2017"
Having been assessed in accordance with ISO/TS 16949:2009 certification scheme rules - Fourth edition 01-10-2017

emissione corrente:
last issued on: 2015-12-30

data di scadenza:
valid until: 2018-09-14

IGQ
Viale Sarca 223 20126 Milano
www.igq.it

Dario Agabato

CISQ AUTOMOTIVE
Via Quintolelli 43 20138 Milano
www.cisqautomotive.it

IQNet
THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

IQNet and its partner
CISQ/IGQ
hereby certify that the organization:

Trafilerie San Paolo Srl

Erba Via C. F. Borromeo, 29 22036 Erba - C.P. 146 Erba Centro CO
Trattamenti termici e superficiali - Via Brianza, 27 23842 Bosio Parini LC

has implemented and maintains a Quality Management System
which fulfills the requirements of the standard

ISO 9001:2008

for the following activities:
Manufacture of cold drawn, hot rolled and peeled steel products, in coils and bars, crude or annealed, destined mainly for production of cold formed parts

issued on: 2015-12-30
valid until: 2018-09-14
CISQ/IGQ certified since: 1991-03-18

Registration Number:
IT - 0034 IGQ 9104

The status of validity of this certificate can be verified at <http://www.cisq.com> or by e-mail to fedcisq@cisq.com

IQNet
Michael Drechsel
President of IQNET

CISQ
Ing. Claudio Proveni
President of CISQ

IQNet Partners:

AENOR Spain AFNOR Certification France AIB-Vinçotte International Belgium ANCE-SIGE Mexico APCER Portugal CCC Cyprus
CISQ Italy, CQC China CQM China COS Czech Republic Cio Cert Croatia DQS Holding GmbH Germany DS Denmark
FCV Brazil FONDONORMA Venezuela KONTEC Colombia IMNC Mexico INNORPI Tunisia
Inspecta Certification Finland IRAM Argentina JQA Japan KFQ Korea MIRTEC Greece MSZT Hungary Nemko AS Norway
NSAI Ireland PCBQ Poland Quality Austria Asserta RR Russia SII Israel SIQ Slovenia SIRIM QAS International Malaysia
SQS Switzerland SRAC Romania TEST St Petersburg Russia TSE Turkey YUOS Serbia

CERTIFICATO CERTIFICATE
IGQ 9104A

Si certifica che il sistema di gestione qualità di:
We hereby certify that the quality management system operated by:

Trafilerie San Paolo Srl

Via Brianza, 27
23842 Bosio Parini LC

è conforme alla norma e ai requisiti dello schema:
is in compliance with the standard and the scheme requirements:

ISO/TS 16949:2009

per le seguenti attività:
for the following activities:

IAF: 17

Fabbricazione di trafilati, laminati e pelati in acciaio, crudi o ricotti, in rotoli e barre principali destinati alla produzione di particolari deformati a freddo per applicazioni nell'industria automobilistica

Manufacture of cold drawn, hot rolled and peeled steel products, in coils and bars, crude or annealed, destined mainly for production of cold formed parts for applications in the automotive industry

Esempio testo valido in accordo alle "Regole per lo schema di certificazione ISO/TS 16949:2009 - Quarta edizione 01-10-2017"
Having been assessed in accordance with ISO/TS 16949:2009 certification scheme rules - Fourth edition 01-10-2017

emissione corrente:
last issued on: 2015-12-30

data di scadenza:
valid until: 2018-09-14

IGQ
Viale Sarca 223 20126 Milano
www.igq.it

Dario Agabato

CISQ AUTOMOTIVE
Via Quintolelli 43 20138 Milano
www.cisqautomotive.it

ATF

0227834

IGQ

CERTIFICATO CERTIFICATE
IGQ 9104

Si certifica che il sistema di gestione qualità di:
is in compliance with the standard:

UNI EN ISO 9001:2008

per le seguenti attività:
for the following activities:

IAF: 17

Fabbricazione di trafilati, laminati e pelati in acciaio, crudi o ricotti, in rotoli e barre principalmente destinati alla produzione di particolari deformati a freddo

Manufacture of cold drawn, hot rolled and peeled steel products, in coils and bars, crude or annealed, destined mainly for production of cold formed parts

prima emissione:
first issued on: 1991-03-18

emissione corrente:
last issued on: 2015-12-30

data di scadenza:
valid until: 2018-09-14

Il Direttore
Dario Agabato

IGQ - Viale Sarca 223 - 20126 Milano - Italy
www.igq.it - info@igq.it

ANAB

ACCREDIA




CISQ

Cold heading wire

Grade	Indicative chemical analysis											
	W. Nr.	C	Mn	Si	S	P	Al	B	Cr	Mo	Ni	Pb
C4C	1.0303	-	0.20	-	-	-	0.02	-	-	-	-	-
		0.06	0.40	0.10	0.025	0.025	0.05	-	-	-	-	-
C10C	1.0214	0.08	0.30	-	-	-	0.02	-	-	-	-	-
		0.13	0.60	0.10	0.025	0.025	0.05	-	-	-	-	-
C20E2C	1.1152	0.18	0.30	-	-	-	0.02	-	-	-	-	-
		0.23	0.60	0.10	0.025	0.025	0.05	-	-	-	-	-
C10Pb	1.0302	0.07	0.30	0.15	0.020	-	0.02	-	-	-	-	0.15
		0.13	0.60	0.35	0.040	0.040	0.05	-	-	-	-	0.30
C15(B)	-	0.14	0.30	-	-	-	0.02	(0.002)	-	-	-	-
		0.18	0.60	0.10	0.025	0.025	0.05	(0.005)	-	-	-	-
16NiCr4(Pb)	1.5714	0.13	0.60	0.15	-	-	0.02	-	0.80	-	0.80	(0.15)
		0.18	1.00	0.30	0.025	0.025	0.05	-	1.10	-	1.10	(0.30)
16MnCr5(Pb)	1.7131	0.15	1.00	0.15	-	-	0.02	-	0.80	-	-	(0.20)
		0.20	1.30	0.30	0.025	0.025	0.05	-	1.10	-	-	(0.35)
17Cr3	1.7016	0.15	0.40	-	-	-	0.02	-	0.70	-	-	-
		0.20	0.60	0.10	0.025	0.025	0.05	-	0.90	-	-	-
19MnB4	1.5523	0.18	0.80	-	-	-	0.02	0.002	-	-	-	-
		0.24	1.00	0.15	0.025	0.025	0.05	0.005	0.15	-	-	-
30MnB4	1.5510	0.26	0.80	0.10	-	-	0.02	0.002	0.10	-	-	-
		0.32	1.00	0.20	0.025	0.025	0.05	0.005	0.20	-	-	-
35B2	1.5511	0.34	0.50	-	-	-	0.02	0.002	-	-	-	-
		0.39	0.80	0.15	0.025	0.025	0.05	0.005	0.15	-	-	-
30CrB4	1.7076	0.30	0.70	-	-	-	0.02	0.002	0.90	-	-	-
		0.34	0.90	0.15	0.025	0.025	0.05	0.005	1.20	-	-	-
34Cr4	1.7033	0.30	0.60	-	-	-	0.02	-	0.90	-	-	-
		0.37	0.90	0.40	0.025	0.025	0.05	-	1.20	-	-	-
42CrMo4	1.7225	0.38	0.60	-	-	-	0.02	-	0.90	0.15	-	-
		0.45	0.90	0.40	0.040	0.025	0.05	-	1.20	0.30	-	-

Grade	Mechanical Properties						Hardening	HRC Min.	Ø Max	Screws class
	Raw (+U+C)			(+U+C+AC+LC)						
	Rm (MPa)	A5%	Z%	Rm (MPa)	A5%	Z%				
C4C	400	30	75	280	40	80	-	-	-	4.8
	500	-	-	350	-	-				
C10C	450	25	65	340	30	75	-	-	-	4.8-5.8
	550	-	-	420	-	-				
C20E2C	500	-	-	400	30	65	-	-	-	5.8-6.8
	600	-	-	500	-	-				
C10Pb	-	-	-	350	30	65	-	-	-	-
	-	-	-	450	-	-				
C15(B)	-	-	-	400	30	70	-	-	-	Autof.
	-	-	-	500	-	-				
16NiCr4(Pb)	-	-	-	450	25	65	-	-	-	-
	-	-	-	550	-	-				
16MnCr5(Pb)	-	-	-	450	25	65	-	-	-	-
	-	-	-	550	-	-				
17Cr3	-	-	-	400	30	70	-	-	-	-
	-	-	-	500	-	-				
19MnB4	550	-	-	400	30	65	890 olio	42	11	8.8
	650	-	-	500	-	-				
30MnB4	650	-	-	450	30	65	870 olio	42	18	8.8-10.9
	750	-	-	550	-	-				
35B2	650	-	-	450	30	65	870 olio	42	18	8.8-10.9
	750	-	-	550	-	-				
30CrB4	-	-	-	500	30	60	850 olio	48	18	10.9-12.9
	-	-	-	600	-	-				
34Cr4	-	-	-	500	30	60	850 olio	48	18	10.9-12.9
	-	-	-	600	-	-				
42CrMo4	-	-	-	500	30	60	850 olio	48	28	10.9-12.9
	-	-	-	600	-	-				

Technical tables

Weights tables			
Ø or side			
mm	Kg	Kg	Kg
2	0.025	0.031	0.026
2.5	0.039	0.050	0.042
3	0.055	0.070	0.060
3.5	0.076	0.098	0.082
4	0.099	0.125	0.108
4.5	0.125	0.159	0.136
5	0.154	0.196	0.169
6	0.222	0.282	0.243
7	0.302	0.384	0.331
8	0.395	0.502	0.432
9	0.499	0.636	0.546
10	0.617	0.785	0.675
11	0.746	0.930	0.816
12	0.888	1.113	0.971
13	1.042	1.327	1.140
14	1.208	1.539	1.322
15	1.387	1.767	1.518
16	1.578	2.010	1.727
17	1.782	2.269	1.949
18	1.998	2.544	2.185
19	2.226	2.835	2.435
20	2.446	3.141	2.698
21	2.719	3.463	2.975
22	2.984	3.801	3.275
23	3.262	4.154	3.568
24	3.551	4.523	3.890
25	3.853	4.908	4.216

Tolerances tables		Normal drawn steel				Turned calibrated steel		
Ø		ISA h 11	10 UT UNI 468	8 UT	ISA h 10	5 UT	ISA h 9	3UT UNI 469
from mm	1							
to mm	3	0.060	0.05	0.05	0.04	0.03	0.025	0.018
from mm	3							
to mm	6	0.075	0.08	0.06	0.048	0.04	0.03	0.025
from mm	6							
to mm	10	0.090	0.10	0.08	0.058	0.05	0.036	0.030
from mm	10							
to mm	18	0.110	0.10	0.10	0.07	0.06	0.043	0.035
from mm	18							
to mm	30	0.130	0.15	0.12	0.084	0.07	0.052	0.045

Resistance class	Ø Thread mm	Examples of steels which can be used
4.8	≤ 35	C4C – C10C
5.8	≤ 15	C10C
	≤ 35	C20E2C
6.8	≤ 13	C20E2C
8.8**	≤ 11	19MnB4 – C23B – 35B2 – 28B2
	≤ 21	35B2 – 30MnB3
	≤ 27	34Cr4 – 34CrMo4
	≤ 27	41Cr4 – 42CrMo4
10.9**	≤ 16	35B2 – 30MnB3
	≤ 20	34Cr4 – 34CrMo4
	≤ 27	41Cr4 – 42CrMo4
12.9**	≤ 18	34Cr4 – 42CrMo4
	≤ 22	41Cr4 – 42CrMo4

** Hardening and tempering compulsory



Steels for springs and chains

		Indicative chemical analysis										
Grade	W. Nr.	C	Mn	Si	S	P	Al	Cr	Mo	Ni	V	Cu
25CrMo4	1.7218	0.22	0.60	-	-	-	0.02	0.90	0.15	-	-	-
		0.28	0.90	0.40	0.025	0.025	0.05	1.20	0.30	-	-	-
41CrAlMo7	1.8509	0.38	0.50	0.20	-	-	0.95	1.40	0.30	-	-	-
		0.43	0.70	0.40	0.025	0.025	1.30	1.80	0.40	-	-	-
45SiCrV6-2	1.8151	0.40	0.60	1.30	-	-	-	0.40	-	-	0.10	-
		0.50	0.90	1.70	0.025	0.025	-	0.80	-	0.20	0.20	0.20
51CrV4	1.8159	0.51	0.70	0.15	-	-	-	0.90	-	-	0.10	-
		0.55	1.10	0.30	0.025	0.025	-	1.20	-	0.20	0.20	0.20
52SiCrNi5	1.7117	0.52	0.70	1.20	-	-	-	0.70	-	0.50	-	-
		0.56	0.90	1.50	0.025	0.025	-	1.00	-	0.70	-	0.20
54SiCr6	1.7102	0.52	0.50	1.20	-	-	-	0.50	-	-	-	-
		0.58	0.80	1.60	0.025	0.025	-	0.80	-	0.20	-	0.20
54SiCrV6	1.8152	0.51	0.50	1.20	-	-	-	0.50	-	-	0.10	-
		0.59	0.80	1.60	0.025	0.025	-	0.80	-	0.20	0.20	0.20

Grade	Mechanical Properties						Destination
	Raw (+AC+C)			(+U+C+AC+LC)			
	Rm (MPa)	A5%	Z%	Rm (MPa)	A5%	Z%	
25CrMo4	-	-	-	500	30	60	High strength chains
	-	-	-	600	-	-	
41CrAlMo7	900	-	-	-	-	-	Transmission chains
	1000	-	-	-	-	-	
45SiCrV6-2	800	-	-	-	-	-	Hardened springs after deformation
	900	-	-	-	-	-	
51CrV4	650	-	-	-	-	-	Hardened springs after deformation
	750	-	-	-	-	-	
52SiCrNi5	-	-	-	750	-	-	Hardened springs after deformation
	-	-	-	950	-	-	
54SiCr6	750	-	-	-	-	-	Hardened springs after deformation
	950	-	-	-	-	-	
54SiCrV6	750	-	-	-	-	-	Hardened springs after deformation
	950	-	-	-	-	-	



Steels for aerospace industry - Steels for oil & marine

Grade	Standards	Indicative chemical analysis								
		C	Mn	Si	S	P	Al	Cr	Mo	Ni
35CD4	AIR 9160C - W.Nr. 1.7224	0.30	0.50	0.15	-	-	0.015	0.90	0.15	-
		0.37	0.80	0.35	0.010	0.025	0.05	1.20	0.30	0.20
SAE 8740	AMS 6322P - W.Nr. 1.6546	0.38	0.75	0.15	-	-	0.02	0.40	0.20	0.40
		0.43	1.00	0.30	0.010	0.020	0.05	0.60	0.30	0.70

Grade	Mechanical Properties						Destination
	Annealed and draw (+AC+C)			Annealed in Process (+AC+C+AC+PE+LC)			
	Rm (MPa)	A5%	Z%	Rm (MPa)	A5%	Z%	
35CD4	-	-	-	-	-	-	Fasteners
	730	-	-	-	-	-	
SAE 8740	-	-	-	-	-	-	Fasteners
	-	-	-	630	-	-	



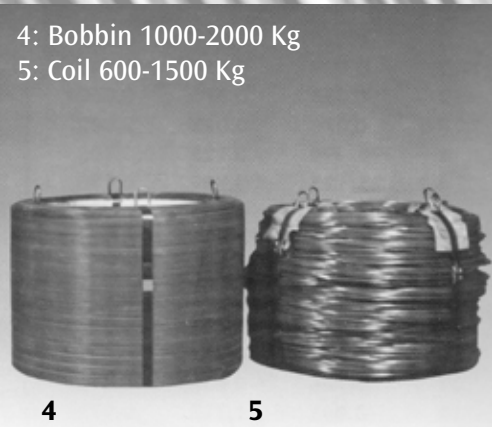
Grade		Indicative chemical analysis										
Tsp	W. Nr.	C	Mn	Si	S	P	Al	B	Cr	Mo	Ni	Cu
C35	1.1172	0.33	0.50	-	-	-	0.02	-	-	-	-	-
		0.38	0.80	0.20	0.02	0.02	0.05	-	0.10	0.02	0.10	0.10
C40	1.0511	0.38	0.50	0.15	-	-	0.015	-	-	-	-	-
		0.43	0.70	0.30	0.02	0.02	0.03	-	0.10	0.02	0.10	0.10

Grade	Mechanical Properties			Destination
	Raw (+U+C)			
	Rm (MPa)	A5%	Z%	
C35	650	7	-	Flexible hoses for transport of oil & gas
	-	-	-	
C40	850	7	-	Flexible hoses for transport of oil & gas
	-	-	-	

- 1: Coil 1000-2000 kg
- 2: Coil 200-600 kg
- 3: Coil 800-1600 Kg



- 4: Bobbin 1000-2000 Kg
- 5: Coil 600-1500 Kg



**The only supplier of peeled
wire in coils up to 42mm**

 **TRAFILERIE
SanPaolo®**

FROM MICRON TO TON EVERYTHING IS UNDER CONTROL

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