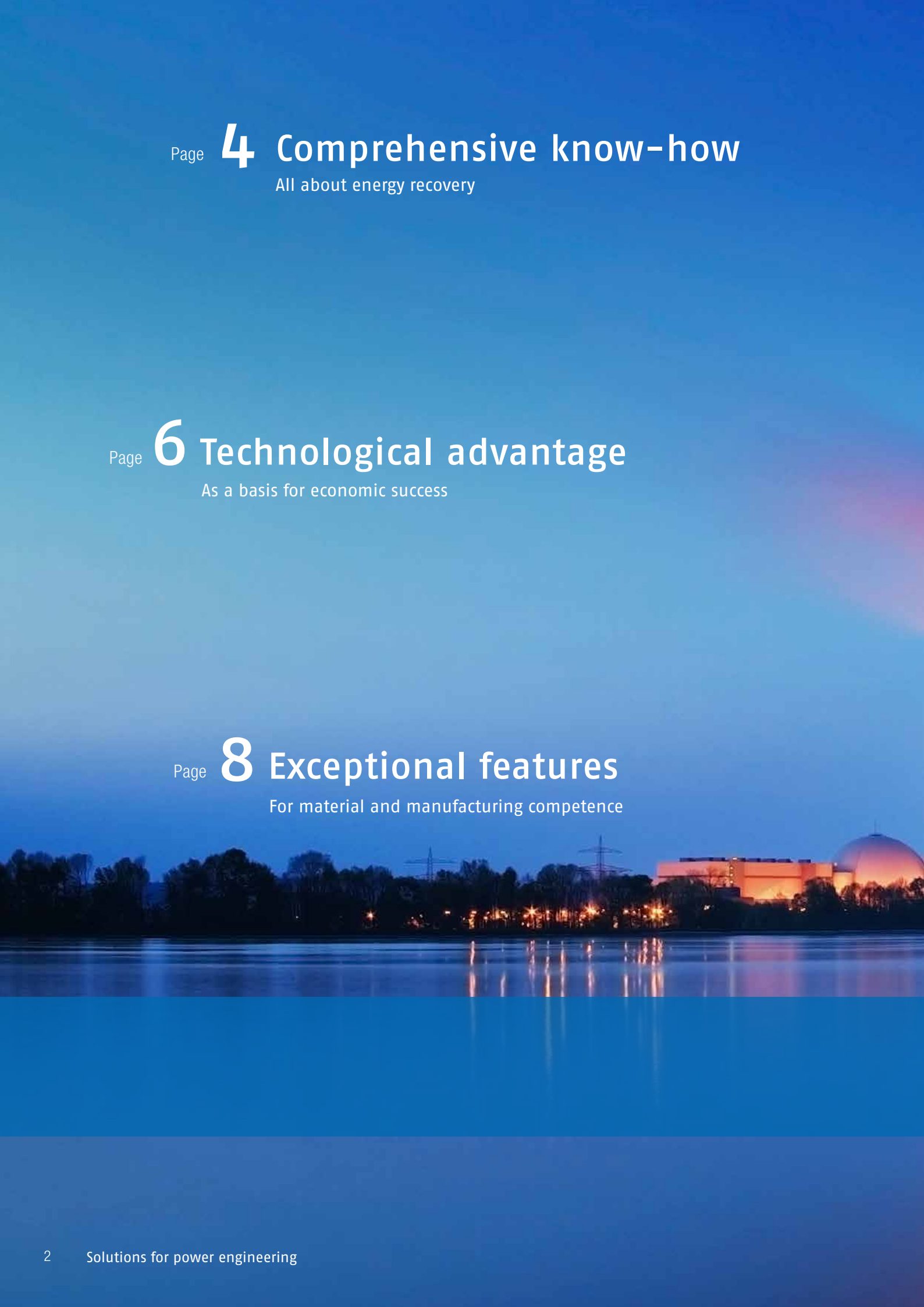
Full power for your goals

Solutions for power engineering

Schmidt + Clemens Group



Why Schmidt + Clemens?

Schmidt + Clemens Group

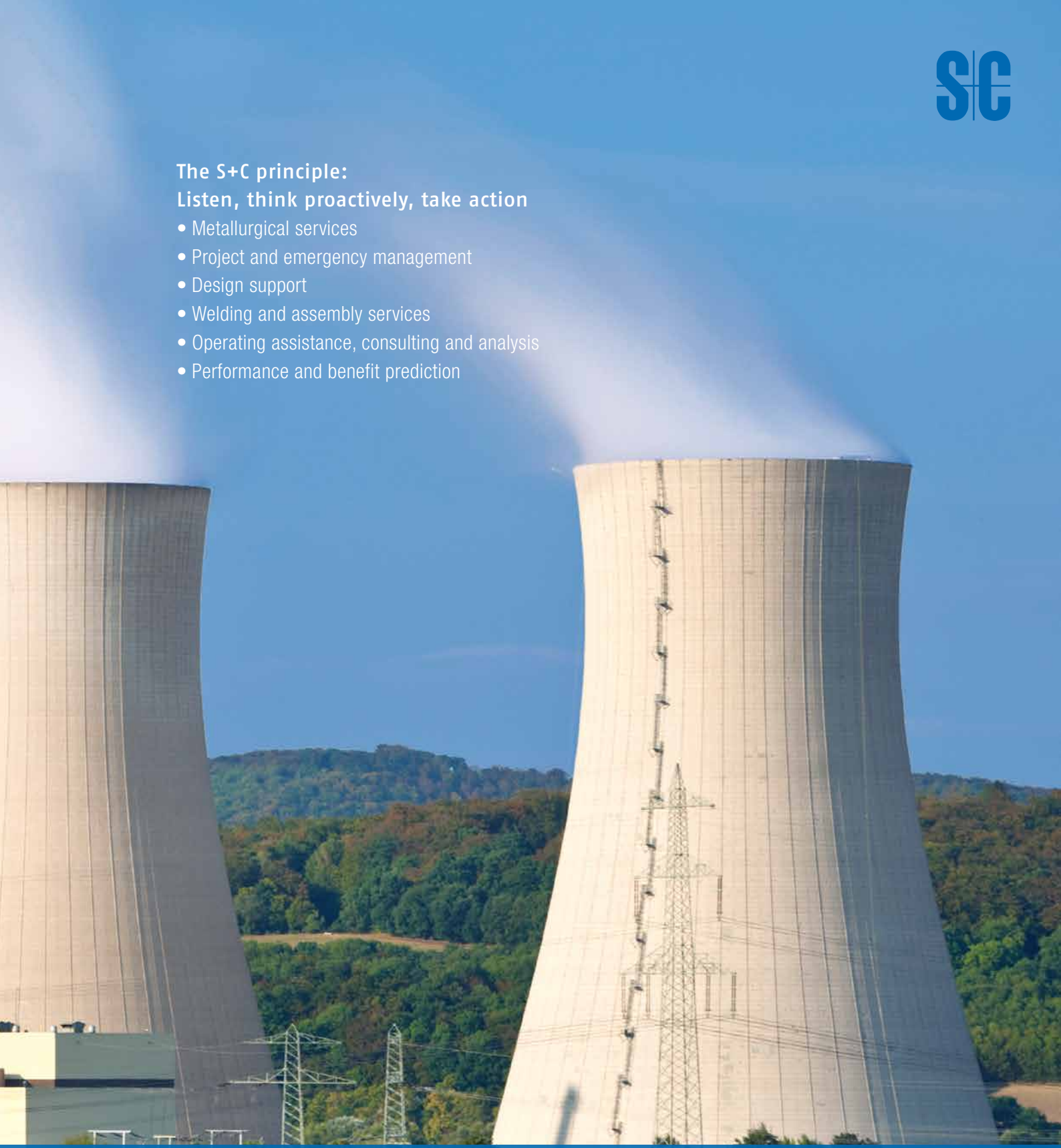
The key to mutual success

When it comes to centrifugally cast components, S+C stands for first-class quality, market-leading production capacity, innovative solutions, and industry-specific know-how all over the world. With regard to the area of power engineering, this means the following: We supply complete system solutions from a single source – for gas, coal, steam, water, biomass, tidal, and nuclear power plants.

In addition to centrifugal casting, we also offer you specifically shaped or precision cast components so that you receive stainless steel solutions that are ready for installation. And because we control all manufacturing processes ourselves, our products will satisfy you with a high degree of reliability, durability, and economic efficiency.

We rely on close co-operation with our customers on a partnership basis for the constant further development of our high-performance materials. This always includes individual consideration for material design and selection. This can lead to us tailoring a material specifically to your needs.

You can profit from our experience and know-how in power engineering if you are an operator of petrochemical plants, fertilizer production, or steel works.



The S+C principle:
Listen, think proactively, take action

- Metallurgical services
- Project and emergency management
- Design support
- Welding and assembly services
- Operating assistance, consulting and analysis
- Performance and benefit prediction

Comprehensive know-how

Schmidt + Clemens Group

The following tables provide a general overview of materials S+C has developed up until now. We will be happy to provide you with more detailed technical information – just call us or send us an E-mail.

Corrosion-resistant stainless steel centrifugal casting

MÄRKER® Irrubigo®	Material no.	Abbreviation	Analysis / reference values in %					≈ ASTM
			C	Cr	Ni	Mo	Miscellaneous	
G 4470	1.4470	GX2CrNiMoN22-5-3	0.02	22.00	5.00	3.00	N	A995 4A
G 45 Mo	–	G-NiCr35MoCuN	0.015	35.00	45.00	9-10	Cu, W, Ta	–
G 4552	1.4552	GX5CrNiNb19-11	0.05	19.00	11.00	–	Nb ≥ 8 x % C	CF 8C
G 4559	1.4559	GX7NiCrMoCuNb41-20	0.052	20.00	41.00	4.00	Cu	–
G 4581	1.4581	GX5CrNiMoNb19-11-2	0.05	19.00	11.00	2.00	Nb ≥ 8 x % C	–
EUZ G 60	2.4697	G-NiCr20Mo15	0.02	19.50	Rest	15.50	Fe ≤ 2.00 %	(CW 12M)

Heat-resistant stainless steel centrifugal casting

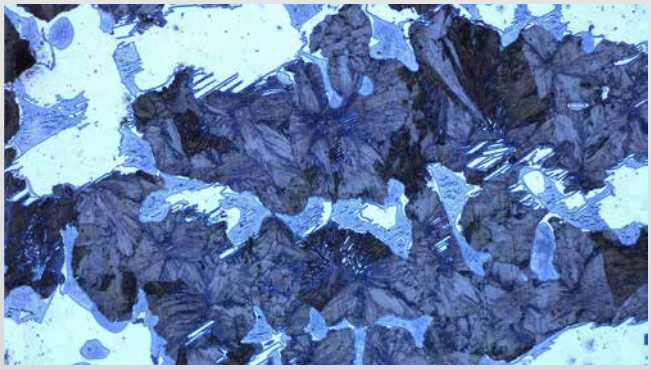
MÄRKER®	Material no.	Abbreviation	Analysis / reference values in %						≈ ASTM
			C	Cr	Ni	Si	Mn	Miscellaneous	
G 4832	1.4823	GX40CrNiSi27-4	0.40	27.0	4.0	2.5	1.5	-	HD
G 4825	1.4825	GX25CrNiSi18-9	0.25	18.0	9.0	2.5	1.5	-	HF
G 4826	1.4826	GX40CrNiSi22-9	0.40	22.0	9.0	2.5	1.5	-	HF
G 4827	1.4827	GX8CrNiNb19-10	0.08	19.0	10.0	1.5	1.4	Nb	-
G 4828	1.4828	GX15CrNiSi20-12	0.15	20.0	12.0	2	1.3	-	-
G 4837	1.4837	GX40CrNiSi25-12	0.40	25.0	12.0	2.5	1.5	-	HH
G 4848	1.4848	GX40CrNiSi25-20	0.40	25.0	20.0	2.5	1.5	-	HK
G 4849	1.4849	GX40NiCrSiNb38-18	0.40	18.0	38.0	2	1.5	Nb 1,3	-
G 4852	1.4852	GX40NiCrSiNb35-25	0.40	25.0	35.0	2	1.5	Nb 1,5	HP + Nb
G 4852 Micro	(1.4852)	GX40CrNiSiNb35-26	0.40	35.0	26.0	1.5	1	Nb	-
G 4855	1.4855	GX30CrNiSiNb24-24	0.30	24.0	24.0	2	1.5	Nb 1,5	(In 519)
G 4857	1.4857	GX40NiCrSi35-25	0.40	25.0	35.0	2.5	1.5	-	HP
G 4859	1.4859	GX10NiCrSiNb32-20	0.10	20.0	32.0	1.5	1.5	Nb 1,0	CT 15 C
G 4868	1.4868	GX50CrNi30-30	0.50	30.0	30.0	2.5	1.5	-	-
G 4879	2.4879	G-NiCr28W	0.50	28.0	48.0	2	1.5	W 5.0	-
G 4879 Co	-	G-NiCr28WCo	0.50	28.0	48.0	1.5	1.5	Co 3,0	-
G 4879 W 16	-	G-NiCr28W16	0.25	28.0	48.0	0.5	0.5	W 16,0	-
ET 35 Co	-	G-NiCrCoW	0.50	28.5	35.0	1.5	1.5	W 6,0 / Co 15,0	-
ET 45 Micro	-	GX45NiCrSiNb4535	0.45	35.0	45.0	1.6	1	Nb + Add	-
G 4630	2.4630	G-NiCr20Ti	0.10	20.0	Rest	0.8	1	Co, Ti	-
G 4650	2.4650	G-NiCo20Cr20MoTi	0.10	20.0	Rest	0.3	0.5	Co 20, 0 Ti	-
G 4816	2.4816	G-NiCr15Fe	0.10	15.0	Rest	0.5	1	Nb, Fe	-
G 4779	2.4779	G-CoCr28Nb	0.30	28.0	-	2	1.5	Co 48,0 / Nb 1,5	(Umco 51)
H 101	-	GX12NiCrNb35-25	0.13	25.0	37.0	1.3	1.5	Nb	-

So that you stay ahead

To secure or expand your position in the marketplace, we start early – namely with the development of new materials. The Research and Development department of S+C is one of the largest in the industry and has incomparable technical equipment and personnel.

We use this as a basis to continually improve our products and their performance. In this way, our materials overcome numerous challenges without a problem, for example, corrosion and abrasion forces in water and coal power plants, gas and steam turbines, and waste incineration plants. At the same time, they provide a first-class price-performance ratio in comparison with conventional forged products.

In addition, S+C takes part in research projects initiated by the German government in the area of regenerative and alternative sources of energy. Your advantage: Even in these power engineering areas, our know-how is always up-to-date.



Technological advantage


KUKA

Self-healing material Centralloy® HTR

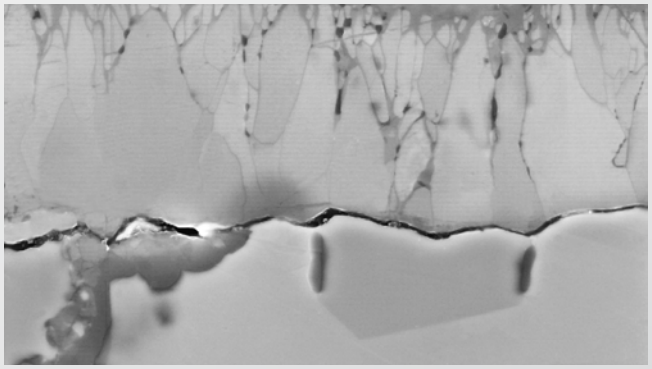
At operational temperatures of 1250°C, the right material selection is particularly important. The material Centralloy® 60 HTR developed by S+C forms a dense "self-healing" oxide layer that increases the service life many times over thanks to carefully controlled additives.

S+C products for power engineering

- Burner nozzles
- Impeller
- Tubes
- Rod materials
- Bushings
- Rings
- Shafts
- Combustion chambers

Advantages of centrifugal casting

During the centrifugal casting process, liquid high alloy steel is poured into a rotating mould and then subjected to centrifugal forces of up to 130 G. This results in a structure which comes very close to that of a forged component in its mechanical and technological properties. In addition, centrifugal casting offers an excellent price-performance ratio.



Exceptional features

Service makes a difference

S+C can offer active support to you when designing power plant components. On the basis of your plans, we assume the technical and geometrical design of your components and support you in the selection of the optimum material.

Then our project management department ensures that all required components are available on schedule. Our highly qualified personnel are able to manufacture and expertly install entire sub-assemblies to suit your requirements.

In addition, we support you worldwide with damage analyses. We conduct extensive tests on defective components and recommend - if necessary – materials that contribute to the avoidance of unplanned down-times. This can considerably increase the economic efficiency of your products and processes.

Conclusion: All over the world, you can benefit from the quality “made by S+C” confirms, from a single source and, at the same time, take advantage of fitting services. Only a system provider like S+C can offer such services in this form.

erything from a single source

Schmidt + Clemens Group

Great Britain

Germany

Czech Republic

Spain

USA

Brazil

Quality on a grand scale

That S+C consistently provides high product quality routinely is a matter of course. Offering very high quantities with uncompromising quality, however, is less so.

Our response to large-scale product requirements that have to be supplied in a short period of time is the global production network of S+C. At a number of locations around the world, S+C operates centrifugal casting production facilities that provide a uniformly high level of quality and, taken as a whole, form one of the highest centrifugal casting capacities in the industry. When you work together with S+C, you can also rely on having one of the largest, and, at the same time, most flexible providers of centrifugal casting solutions on your side.

Global presence

Schmidt + Clemens Group

We keep our word

For S+C, a fair and professional partnership includes two things: problem-free procedures and concrete support measures.

For this reason, the project planning and project management of your orders is controlled and managed from a central department. But in addition to this, at S+C, you have a personal contact person who is always fully aware of all aspects of your order and the order status.

For work on your plants, we naturally have the necessary certificates. In addition, our performance is confirmed by regular audits.

Lloyd's Register
LRQA

CERTIFICATE OF APPROVAL

This is to certify that the Management System of:

Schmidt + Clemens GmbH + Co. KG
Kaiserau 2, 51789 Lindlar
Germany

has been approved by Lloyd's Register Quality Assurance to the following Quality, Environmental and Safety Management System Standards:

ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007

The Management System is applicable to:

Development, manufacture, fabrication, procurement and sales of centrifugally cast-, statically cast-, forged and rolled products.

Approval Certificate No: KLN 0923999-01

Original Approval QMS	27 April 2010
Original Approval EMS	29 April 2013
Original Approval SMS	28 March 2014
Current Certificate:	28 March 2014
Certificate Expiry:	30 April 2017

Issued by: Lloyd's Register Quality Assurance GmbH
For and on behalf of: Lloyd's Register Quality Assurance Limited

Constant reliability

Schmidt + Clemens Group

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How can we support you?

Schmidt + Clemens faces up to and copes with the growing challenges in power engineering. Test us and experience how mutually satisfying, economical, and reliable a cooperation can be. Let yourself be convinced by our intelligent product alternatives.

Hotline: +49 2266 92-507

We are ready