



SORG

DESIGNED FOR PERFORMANCE.
ENGINEERED FOR ENDURANCE.

TABLE OF CONTENTS

FOREWORD

WHO WE ARE

OUR HISTORY

TECHNOLOGY

INTRODUCTION

MELTING

CONDITIONING

MATHEMATICAL MODELLING

MODERN DESIGN TOOLS

DIGITALISATION

SERVICES

INTRODUCTION

INNOVATION

SUSTAINABILITY

SORG GROUP

CONTACT

3

4

6

8

10

12

14

16

18

20

22

24

26

28

FOREWORD

Dear reader,

Nikolaus SORG's history is interlaced with the history of glass. In this brochure, you'll learn how we have shaped the world of glass for over 150 years. You'll also understand how the Sorg family's passion for glass has helped us become the world leader in glass melting and conditioning technology. The following pages will explain the products, technologies and services that are making our industry more efficient and sustainable than ever.

ALEXANDER SORG
Managing Partner
Nikolaus SORG GmbH & Co. KG

MICHAEL SORG
Managing Partner
Nikolaus SORG GmbH & Co. KG

Nikolaus SORG presents security, stability and ultimate performance for glassmakers in over 80 countries. We're a family business founded in 1872 that is still owned and managed by the Sorg family, now in its 5th generation. We produce highly sophisticated glass furnaces that deliver performance, endurance, efficiency and sustainability in equal measure.

150+
YEAR HISTORY

80+
COUNTRIES

100+
PATENTS

300+
FURNACES WORLDWIDE



OUR PURPOSE

Our duty is to design the most advanced furnaces and technologies that combine the highest performance with the most extended life. We are equipped to support glass manufacturers worldwide, today, tomorrow and well into the future. Our relentless focus on research and development has achieved some of the most significant glass melting and conditioning breakthroughs.

We are well placed to overcome the new challenges our industry now faces. With SORG, excellence comes without compromise.

OUR VISION

To develop innovations that will provide carbon neutrality and ensure a prosperous future.

OUR PROMISE

To work honestly and transparently with customers to design and engineer a glass furnace that performs and endures better than any other furnace.

OUR VALUES

PERFORMANCE

SORG is fully committed to designing furnaces that have the best performance in every way. Our products are developed to produce high-quality glasses with minimum energy waste and emissions.

TRUST

At SORG we believe that developing modern equipment is just part of what has made us the world leader in glassmaking solutions. More important than that is our commitment to creating opportunities and investing in our team, allowing them to reach their full potential.

ENDURANCE

We provide lifecycle support to make sure furnaces and other pieces of equipment can withstand the most challenging environments and remain in operation for decades.

CARE

We are a family motivated by the will to be better and stronger at each moment. We care about the company's mission and the clients' expectations, and we care about our employees' dreams and ambitions. We are a family with a clear goal: to work together to be the best version of ourselves.

FUTURE READY, PROVEN THROUGH HISTORY



TIMELINE

1872

SORG is founded in the Thüringen Forest, Germany.

1949

The company is relocated to Lohr am Main, Germany.

1971

SORG invents the VSM®, the world's first vertical all-electric melter.

1972

First patent granted. Over 100 more will follow over the years.

1978

The Deep Refiner® is created to increase residence time and lower glass temperature in the throat and working end.

1986

The LoNOx®, a specialist furnace, is designed with low NOx emissions.

1990

SORG develops the FlexMelter, a highly flexible furnace for high-quality glass.

1996

ISO 9001 certification achieved.

1998

The Boro-Oxi-Melter® is designed specifically to melt difficult glasses.

1999

The Conti-Drain® is designed to remove contaminated glass from forehearths.

2011

The Batch3 Integrated Concept is created, combining three industry-leading technologies to reduce energy consumption and CO₂ emissions.

2012

SORG develops the OxEcon®, an oxy-fuel firing furnace with internal batch pre-heating.

2017

SORG is recertified to ISO 9001.

2020

Launch of the CLEAN Melter®, the first furnace for larger tonnages with up to 80% electric share.

TECHNOLOGY

Every innovation we deliver is driven by customer needs, overcoming industry challenges or moving technology forward. We are the only furnace company in the world that features a wholly-owned research and development department for the advancement of glass melting and conditioning. This tireless commitment to innovation has been at the heart of SORG since our inception, 150 years ago.



MELTING

Backed by 150 pioneering years, 100s of patents and support from the industry's brightest minds, every Nikolaus SORG furnace is designed to your exact specifications – with our trademark efficiency, performance and reliability built-in as standard.

CONDITIONING

Once out of the furnace, our complementary conditioning systems will help you maintain the highest quality and efficiency. From distributors and working ends to forehearth, gathering bays and auxiliary equipment, we'll design an integrated system that works seamlessly throughout the process to keep everything running at full capacity.

MATHEMATICAL MODELLING

SORG uses mathematical concepts to understand the melting process, analyse the effects of different components in glass production, and make precise predictions of the furnace's design impacts on product quality. Mathematical modelling is today the most advanced tool to prove and improve the existing design and develop new technologies.

MODERN DESIGN TOOLS

Using systems including 3D laser scanning and 3D design enables a seamless process and a product of the highest quality for our customers.

DIGITALISATION

The digitalisation of the glass melting process presents many opportunities both for glassmakers and glass itself. From raw materials to glass delivery, SORG is developing innovations that will increase the predictability of melting glass across many applications, to provide a secure future.

MELTING

SORG is able to supply many different types and sizes of furnaces for the widest range of production and site conditions. Our furnaces are designed for low energy consumption, low emissions, low maintenance and maximum uptime, to deliver the best possible operating results for your production.

SORG provides a wide range of furnace options including:

REGENERATIVE END-FIRED
REGENERATIVE CROSS-FIRED
RECUPERATIVE END-FIRED
RECUPERATIVE SIDE-FIRED
ALL-ELECTRIC
HYBRID
OXY-FUEL

CONDITIONING

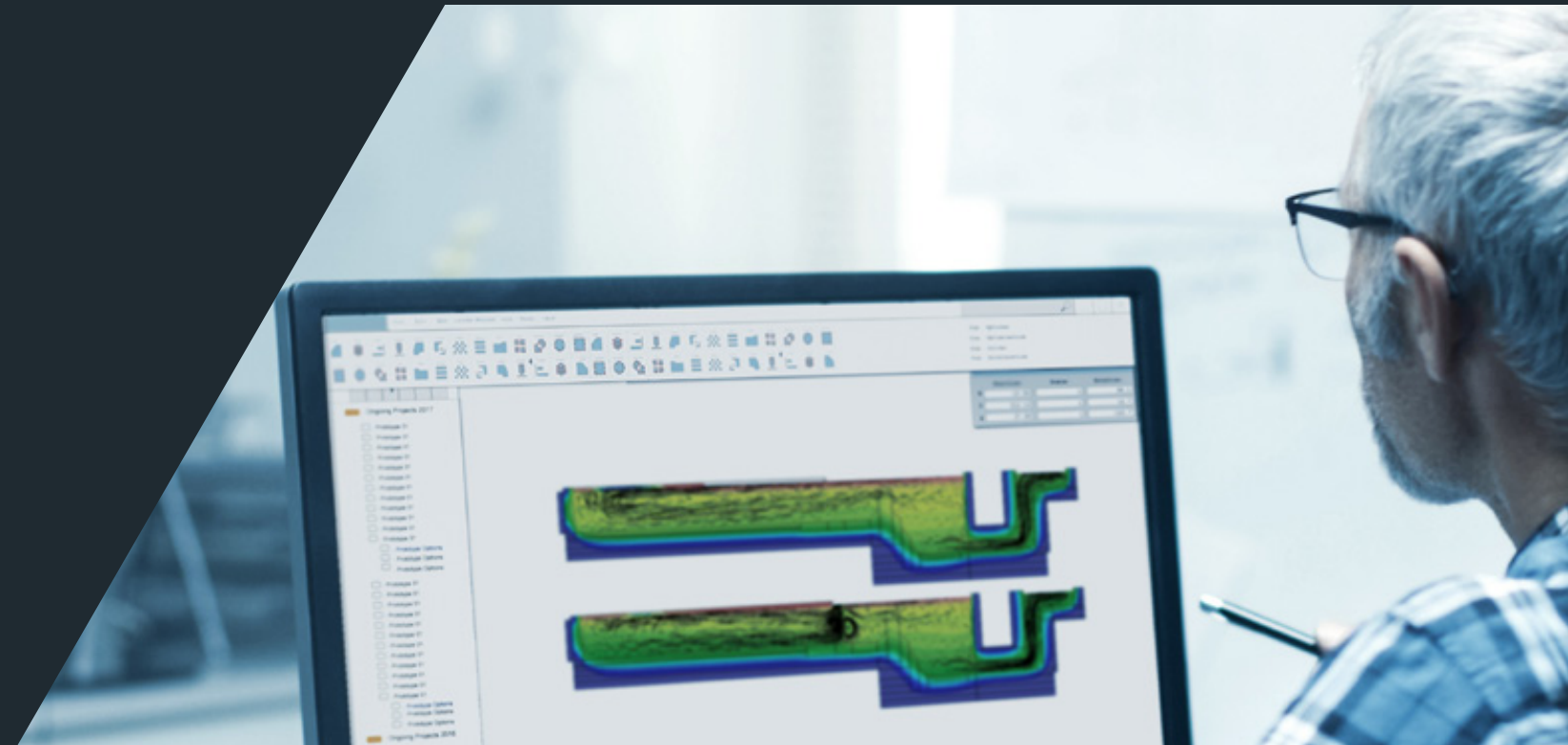
Once out of the furnace, our complementary conditioning systems will help you maintain the highest quality and efficiency. From distributors and working ends to forehearth, gathering bays and auxiliary equipment, we'll design an integrated system that works seamlessly throughout the process to keep everything running at full capacity.

SORG provides a wide range of conditioning systems including:

DISTRIBUTORS
FOREHEARTHS
HEATING SYSTEMS
COOLING SYSTEMS

MATHEMATICAL MODELLING

We are utilising computer modelling more extensively to design furnaces and glass conditioning systems. The key to mathematical modelling is the experience of the modeller and the quality of their assumptions. SORG can simulate designs with pinpoint accuracy and compare different solutions to deliver fully reliable predictions.



MODERN DESIGN TOOLS

With modern design tools we are able to design the installation in the correct manner with collision control and a detailed part list. While with laser scanning we have a mighty tool to check the existing installation. Both can be combined and the data from the laser scanning is incorporated in the 3D design.



3D DESIGN

3D is the most modern and advanced design tool. Collision control is its main advantage. Reworking on-site or late modifications belong to the past.

LASER SCANNING

Laser scanning can provide all the information you need when technical drawings and documentation are not available, up-to-date or accurate enough.



DIGITALISATION

The digitalisation of the glass melting process, in turn presents many opportunities both for glassmakers and glass itself. From raw materials to glass delivery, SORG is developing innovations that will increase the predictability of melting glass across many applications to provide a secure future.

AUTOMATION

SORG's automation covers the entire glass melting process from batch charging to production-ready glass.

INDUSTRY 4.0

Industry 4.0 is based on continuous standardisation, networking, and digitalisation of the complete production chain.

SERVICES

We recognise that giving support over the lifecycle of a furnace is as important as it is during its rebuild or start up, especially considering that furnaces are in operation for longer periods of time and lifetimes are extending. On top of that, glass production can be harsh and unpredictable.

To give glassmakers peace-of-mind, SORG is committed to unrivalled customer support. Our in-house specialists offer furnace operation optimisation and auditing, glass defects analysis, full maintenance support and consultation on raw material selection and batch composition.



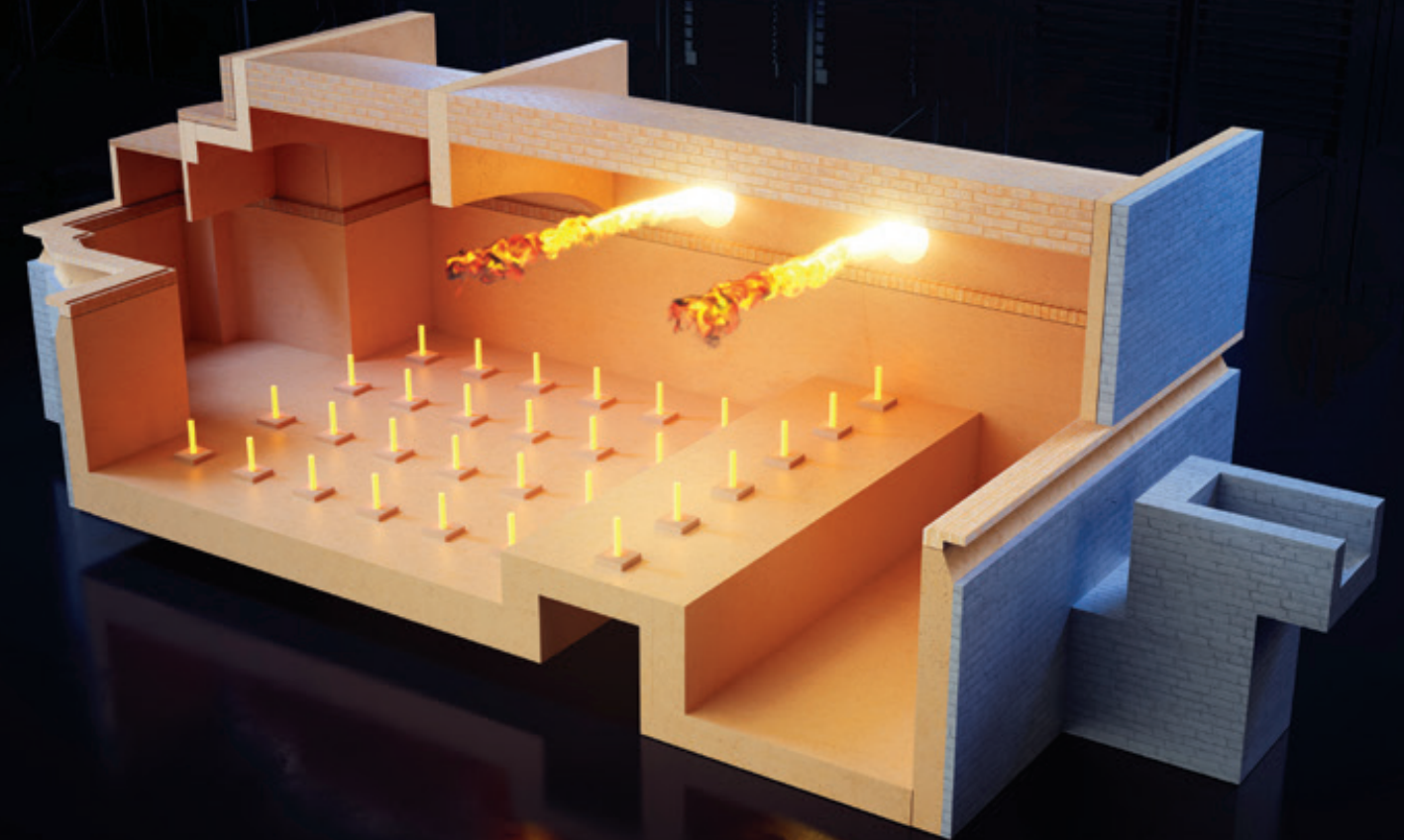
INNOVATION

More than 50 years ago, SORG changed from a furnace builder to a technology innovator. In 1971 the first full-electric furnace type — the VSM® — was developed and started operating. Since then, SORG has been improving or developing technologies. We engineer new furnaces, components and techniques — everything to offer our customers solutions for their individual needs and to bring the glass industry forward. Our 100+ patents prove it.

Patents of SORG include ground-breaking innovations such as the VSM® and Deep Refiner®. The Deep Refiner® concept has been copied and adopted by many manufacturers.

Another game-changer was the refining bank. This is an integral part of the FlexMelter, Boro-Oxi-Melter®, LoNOx® and OxEcon® furnaces. Very recently this has been used to produce solar glass. The refining bank has also been implemented on a classic end port furnace to make high-quality glass.

We are the only furnace company in the world to have a wholly-owned research and development department, which is crucial to all technological advancements. As we look to a sustainable future, innovations in all-electric and advances in hybrid melting will become the new foundation for melting glass worldwide.



SUSTAINABLE MELTING

The world faces an existential threat: climate change. Our vast experience gives us the unique advantage of being the world leader in glassmaking technology. But it also gives us the responsibility and the honour of pushing the industry forward. SORG will lead the glass industry in its mission to become sustainable.

We have built more than 100 all-electric melters for applications such as standard soda-lime glasses and special glasses with high evaporation pressure components. Products have ranged from pharmaceuticals and cosmetics to container glass, in furnaces from 5 tpd up to 200 tpd. We have also successfully installed a container glass all-electric furnace with the highest ever pull. In addition to all-electric, SORG developed the LoNOx® Melter in 1986, changing the face of modern combustion melting technology. It was the first furnace to feature integrated batch pre-heating combined with an external cullet pre-heater, which achieved unparalleled energy efficiency and the lowest levels of NO_x ever achieved in industrial glass melting furnaces by primary measures.

More recently we have developed the world's first hybrid melter – the CLEAN Melter® – capable of up to 80% electric share for larger tonnages.



THE POWER OF THREE

SORG Group combines leading technologies in furnace and batch house design and engineering. This unique advantage allows us to provide optimal furnace design, glass melting, glass conditioning and installation as an integral part of our services.



We are a customer-centric partner dedicated to designing, constructing and improving batch and cullet plants using the best technology available.

eme.de



We are the world leader in glass melting and conditioning technology, enhancing the performance of furnaces to maximise asset lifespan.

sorg.de



We are the world-leading service provider for furnace erections, steel supply and glass-to-glass rebuilds, as well as maintenance and hot repairs.

sks.net



CONTACT

If you have questions or are looking for more information about our products, look no further.

Get in touch with our team today.

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