Graphite Electrodes
Electrodes are our Future.
SDK – Showa Denko

Graphite Electrodes

SDK’s Graphite Electrodes business manufactures regular-sized and super-sized ultra-high-power graphite electrodes for the production of steel in electric arc furnaces, and for use in smelting applications such as silicon and phosphorus.

We deliver continuous and sustainable value for our customers. Maintaining the high quality of our products and services is part of our core philosophy and is sustained by an all-encompassing application of the Six Sigma methodology.

The business is managed by an international team of managers, empowering our people across national borders and legal entities to shorten decision making processes, enabling quick responses to changing customer requirements.

We strive to be the electrode supplier of choice with customized solutions from our broad product, service and technology portfolio.

SDK is a leader in its field. We have a broad product and technology portfolio, a global sales network and state-of-the-art production sites in Europe, North America and Asia. SDK’s Graphite Electrodes are produced with strict quality control and they are highly valued by all customers.
Optimized Electrode Application

Competences and Services

Competence to optimize your graphite electrode application
SDK provides a global network of experts for the steelmaking process. Our expertise is in all services around graphite electrodes. Working with our experts and specialists means innovative application of product and process know-how, with a focus on delivering statistically-valid results. The vast collection of experience within our team means that solutions and ideas are always found. We know most of the EAF applications in the world, having delivered electrodes to more than 2000 EAFs in more than 80 countries.

Our services
What we offer goes far beyond “standard” product-related services. Our services are tailored to specific situation of individual furnace. Our services to customers include:

- Product monitoring
- Performance analysis
- Inventory control
- Inspection of accessories
- Monitoring of electric arc furnaces
- Customized reporting CEDIS®
- Tailor-made data analysis
Customized Reporting
Identifying Problems Beforehand

Customized reporting

Each meltshop wants to monitor parameters specific to its process. Our team members carry out on-site measurements and deliver reports and analysis in return. The reports are customized – in easily understandable formats – to meet our customer’s individual requirements. Alarm and warning limits can be allocated and visually flagged in these reports.

CEDIS® - EAF performance monitoring system

CEDIS® – or Customized EAF Data Information System:

- Continuously monitoring EAF process data
- Intelligent System
- Regular Reports / Customized Reports
- E-mail alerts
- CEDIS® is backed up by service engineers

Improvement detection tool

Our experts analyze CEDIS® data systematically to find potentials for process optimization, and make recommendations for improvement cooperation to customers. Graphs and reports created from CEDIS® data can be very helpful for visualizing long-term trends in process parameters.
Online monitoring for DC-EAFs

SDK offers an online DC-EAF performance monitoring system to make visible all important and critical parameters that control the performance and efficiency of the DC-EAF process. The results are analyzed to define actions for further improvements.

Professional use of methodologies and tools

Six Sigma as a leading tool for efficiency investigation

Process improvement teams use Six Sigma methodology to look for effective ways to improve process efficiency. The application of statistical methods provides opportunities to find inefficiencies and deviations in the process. The tools also help to avoid misleading directions of research and investigation. Such a project is always a cooperative effort between SDK’s service team and our customer.
EAF Process Improvements
Increasing Furnace Productivity

Technical expertise for process improvements requires a comprehensive toolbox together with the expertise and know-how of our service professionals accumulated over many years of working with EAFs. If performance or consumption improvements are required, or an electrical or mechanical problem needs to be solved, our EAF fine-tuning cooperation can help to resolve problems, to avoid and to reduce costs.
We offer experienced professionals using specialist tools

A wide range of tools is available to improve the EAF melting process:

- Consumption model – to check theoretical and real consumption data
- Calculation of productivity increase
- Recommendations for EAF design and operational questions
- Furnace start-up assistance
- Electrical energy modeling
- Regulation tuning
- Hydraulics
- Power (melting) profiles
Seminars and Practical Training
Increasing People Productivity

Electrode care and handling

Graphite electrodes are sensitive and need to be handled carefully. The same care should also be taken with mechanical and electrical jointing equipment. Proper handling and treatment are absolutely necessary to achieve high performance results in the process. SDK offers training and seminars to help you achieve this:

- Accessory handling training
- Equipment integrity check
- Jointing improvement
- Training and workshops
- Support on all EAF-relevant improvement questions
Process know-how

Our professionals have a broad and deep knowledge of the steelmaking process. They are trained to use a set of advanced tools for analysis of an existing process. Our people are dedicated and well-equipped to find ways to help our customers improve their EAF productivity/efficiency.

- Workshops on customer request
- Customer cooperation
- Tools and methodologies
- Six Sigma methodology
- Advanced data analysis and statistics

Graphite electrodes made by SDK

Our graphite electrodes are made by people who have a deep understanding of the process and product. With the use of state-of-the-art machinery in modern production locations on three continents, we aim for the highest quality standards and reliability of supply expected by our customers.

With rigorous application of Six Sigma methodology and tools, we strive for ever better efficiencies and consistency in order to deliver the best electrodes for our customers.
ECO PRO stands for EAF Control Optimization and professional cooperation.

Under SDK ECO PRO we form special partnerships with our prime customers to gain better results. Highly qualified and experienced SDK personnel employ Six Sigma techniques along with the customer’s own experience to find solutions applicable to the unique situation of the particular customer. We believe that cooperation has only been successful if our customer is totally satisfied with the improvements achieved on completion of the project.

SDK ECO PRO partnerships cover not only electrodes but also everything around the EAF process. Successful cooperation carried out so far have related to topics such as:

- Higher efficiency
- Power and Process Profiles
- Lower energy consumption
- Productivity increases
- Carbon / oxygen injection
- Chemical energy optimization
- Customer cost reduction
## Partnership Concepts

### Value-added Services

**Value-added services**

Our services not only include electrode handling care but cover much more – such as analysis of process deviations and recommended actions for process improvement.

Common target topics are customer’s objectives and EAF KPIs (Key Performance Indicators) like reduction of specific energy consumption, electrode consumption, and tap-to-tap times. The direct benefits of this for the melting process are improvement of performance and consumption, with consequent cost savings or cost avoidance. This forms the basis for a partnership concept with our customers.

### Total Cost of Ownership (TCO)

Many customers view SDK as much more than just an electrode supplier. Our service professionals provide ongoing support for customers’ process improvements and reduction of process variability, based on mutually agreed cooperation with defined targets and cost impacts.

SDK is proud of its long record of success in the steelmaking industry as a partner in process improvements.
Graphite Electrodes and Services

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