Evolving the well-established

vdz

Education and Training Programme 2023/24

Training Courses and Workshops 2023/2024

 = online seminar

Dear customer, dear reader,

We are pleased to present the latest edition of our seminar and training brochure for the next two years. Our new seminar programme 2023/2024 focuses on a broad and varied training offer for professionals and managers. For more than 60 years now VDZ has been successfully providing education and vocational training for employees in the building materials industry and related industrial sectors.

Our new programme ranges from teaching technical basics and technical expertise to further training for managers. We offer individual, tailor-made seminars on the topics of clinker and cement production, maintenance, quality assurance, environmental protection, and concrete technology. In this new brochure you will find two new seminar topics reflecting current developments in the cement and concrete industry.

With the progressive decarbonisation of cement production, the use of clinker-efficient cements to reduce CO_2 emissions is becoming a relevant topic for the industry. Our seminar "Cements of the future" focusses on new, clinker-efficient cement types such as CEM II/C and CEM VI cements, whose performance allows a wide range of applications in practice. This seminar provides an overview of the current state of development and standardisation of new cements. The possibilities and limits for practical implementation will be presented.

In our new seminar "Durability of concrete", participants will receive a comprehensive overview of concepts for ensuring the durability of concrete structures. In addition to damage mechanisms, concrete technology and design elements, including their use, will be explained. In addition, questions on how to achieve high freeze-thaw resistance with and without de-icers and how to avoid harmful alkali-silica reactions will be answered.

Almost all seminars can also be held tailor-made and implemented as in-house seminars according to individual customer requirements. In addition to our tried and tested attendance seminars, we now also offer a range of online seminars. All seminars which you can attend online are marked with a special online symbol in this flyer. Some seminars can be booked flexibly as online or attendance seminars.

In addition, VDZ is also offering a new learning platform called "cement-academy.org" on which our well-known online courses on all stages of the cement manufacturing process, our popular concrete and lime courses, selected lectures from VDZ seminars and electronic reference books will be available. The new-look platform offers enhanced visual appearance and increased user-friendliness. Navigation is intuitive and self-explanatory and a video on how to use the platform is also integrated. The platform has been optimised so that videos, texts, animations and other functions are compatible with all digital and mobile devices.

Dr Stefan Schäfer
VDZ Training Centre

Training Courses 2023/2024

Process Technology of Cement Production - Module 1

C-PTP

Raw material preparation and cement grinding are the first and the last major process steps during cement production. The energy demand of these two processes amounts to up to 75% of the electrical energy used in a cement plant. This training will enable participants to obtain a better understanding of the comminution processes as well as the equipment used for material grinding to ensure high levels of availability. This altogehter will allow an optimisation of production rates and reducing energy consumption.

Learning objectives
Overview of all relevant aspects of the cement manufacturing process up to the application of cement in concrete.
Attaining fundamental knowledge of raw material preparation and cement production with regard to comminution processes, equipment used and quality analysis.

Target groups
- Process personnel
- Process and control room operators
- Young engineers

Topics
Raw materials extraction
- Mining operations
- Raw material homogenisation

Quality parameters
- Understanding powder characteristics
- Particle size analysis
- Specific surface according to Blaine / BET - method

Grinding technology
- Mills, classifiers / Tromp curve
- Open and closed circuit grinding
- Impact of grinding systems on cement properties
- Optimisation of grinding equipment

Methods
Presentations, interactive exercises, group discussion, experience exchange, practical exercises, final exam (if requested).

16 - 20 January 2023

Location: Duesseldorf, VDZ
Five days classroom training (6 hours per day) or online seminar depending on the situation.

2,750 € per participant

Further information and registration
https://vdz.info/ptpic

Trainers
Experienced engineers and highly specialised researchers.

Certificate
The participants will receive a certificate of attendance.

Process Technology of Cement Production - Module 2

C-PTP

Clinker production is the most energy-intensive process step in cement manufacturing. It can represent up to 90% of the total energy demand in a cement plant and is therefore a main focus not only with regard to cost optimisation and quality improvement of the final product, but also regarding emission control and the reduction of impacts on the environment. VDZ's training will enable participants to obtain a deeper knowledge of the clinker production process and a better understanding of the impacts that daily decisions of plant personnel can make on the plant's performance (quality, electrical energy use, fuel consumption and emissions).

Learning objectives
Overview of all relevant aspects of the clinker burning process. Attaining fundamental knowledge of cement manufacturing technology (material and burning technology), including the interconnection of sub-processes, process optimisation, emission abatement and efficient use of energy

Target groups
- Young engineers
- Production personnel and technical staff
- Process engineers
- Quality and laboratory managers

23 - 27 January 2023

Location: Duesseldorf, VDZ
Five days classroom training (6 hours per day) or online seminar depending on the situation.

2,750 € per participant

Further information and registration:
https://vdz.info/ptpic

Topics
Material technology
- Characterisation of raw materials
- Clinker formation and clinker phases
- Clinker properties and effects on product qualities

Raw material preparation
- Blending beds and homogenisation silos
- Raw meal uniformity and quality control

Clinker production and burning technology
- Preheater, calciner, rotary kiln, burner, cooler
- Clinker burning reactions
- Alternative fuels and effects on burning process
- Circulation phenomena (chlorine, sulphur, alkalis, etc.)
- Energy efficiency

Environment and emissions abatement (dust, NO_x, SO_2, organics, trace elements, etc.)
- Emission monitoring
- Emission abatement techniques

Refractories

Methods
Presentations, interactive exercises, group discussion, experience exchange, practical exercises, final exam (if requested).

Trainers
Experienced engineers and highly specialised researchers.

Certificate
The participants will receive a certificate of attendance.

Basic Course Process Control

C-SIb

The SIMULEX® cement plant simulator for training plant supervisors, foremen, production personnel, control room operators and young engineers was developed by KHD Humboldt Wedag AG in cooperation with VDZ.
For over ten years VDZ has been using the simulator within the framework of training courses and has been continually supporting the further development of the system with practical input from the industry. The simulator provides a realistic reconstruction of a production plant with a state-of-the-art supervisory control and data acquisition system (SCADA).

Learning obejctives

- Comprehensive knowledge of the plant control system in general and the main control circuits in particular.
- Better understanding of how the various sub-processes in the cement plant are interconnected.
- Understanding of the main control circuits in order to reach and maintain target values (e.g. energy consumption).
- Capability to react to process disturbances in a proper way and to develop a long-term control strategy.

Target groups

- Production personnel
- Control room operators
- Young engineers

Topics

- Heating up and operating the kiln
- Operation of the raw, cement and coal mills
- Optimising production
- Managing process disturbances and special situations

Methods

Presentations, interactive exercises, scenario-based training using the simulator, team work, group discussion.

Trainers

The training is led by highly skilled and experienced engineers.

6 - 9 February 2023

Location: Duesseldorf VDZ

2,200 € per participant

Further details and registration
https://vdz.info/bcpc

Certificate

The participants will receive a certificate of attendance.

Cements of the future

W-COF

With the decarbonisation of cement production and the expected reduction in blastfurnace slag and fly ash quantities unburned limestone, calcined clays and recycled fines will gain in importance as cement main constituents. The focus will be on new, clinker-efficient cement types such as CEM II/C and CEM VI cements, whose performance allows a wide range of applications in practice. This seminar provides an overview of the current state of development and standardisation of new cements. The possibilities and limits for practical implementation will be presented.

Learning obejctives
Participants will gain a deep insight into the possibilities and limits of the use of clinker-efficient cements for the reduction of CO_2 emissions.

Target groups
- Plant managers and engineers
- Lab managers and staff
- Environmental managers
- Construction consultants
- Quality managers

Topics
- Role of clinker efficient cements as an important part for the decarbonisation of concrete construction
- Cements with calcined clays
- Durability and practical feasibility of cements with high content of limestone
- Possibilities and limits of alternative binders
- Cements with recycled fines as main component
- Performance of new clinker efficient cements CEM II/C and CEM VI in concrete
- Technical approval procedure for new cements

Methods
Presentation, discussion

27 April 2023

Location: Duesseldorf VDZ

670 € per participant

Further information and registration:
https://vdz.info/cof

Certificate
The participants will receive a certificate of attendance.

Firing Alternative Fuels

W-AFU

This course covers all relevant aspects concerning the use of alternative fuels in cement plants. Starting with the main political drivers such as the circular economy and the European waste fuel strategy, the training will give a detailed view of the current state-of-the-art-situation with regard to the use of alternative fuels in the EU. In this context, pre-treatment and suitable quality control of alternative fuels will be also explained. A main focus will be given to the drivers and barriers of the use of alternative fuels within the burning process. Relevant aspects will be explained and discussed with the participants. Finally, technical feasibilities, case studies and possible optimisation potential will be part of the training course.

Learning objectives
Comprehensive overview of using alternative fuels in cement plants (from reception and quality control to firing).

Target groups
- Process and lab engineers
- Energy managers
- Quality managersr

Topics
- Legal requirements
- AF Quality: Sampling and analysis
- Types of AF and impacts on the burning process
- Firing AF
- Optimisation of AF use
- Case studies
- Impact on clinker and cement properties

Methods
Presentations, group discussion and experience exchange
Training sessions in courses: 9:00 - 13:00

Trainers
Experienced engineers and highly specialised researchers.

18-21 September 2023
08-11 April 2024
16-19 September 2024

Online seminar

2,200 € per participant

Further information and registration:
https://vdz.info/afuels

Certificate
The participants will receive a certificate of attendance.

Crash Course for Young Engineers and Young Scientists

W-CYE

The cement industry provides excellent job opportunities for young engineers and young scientists. Training schemes introduce these new employees to cement technology, taking their different professional backgrounds into account. This training course provides an one-week in-depth training session which covers all relevant aspects of clinker and cement technology production including chemistry, mineralogy and environmental aspects. Quality control assurance as well as the cement performance of cement in mortar and concrete will also be addressed.

Learning objectives
Overview of all relevant aspects of the cement manufacturing process.

Target groups
- Recently recruited young engineers
- Skilled specialists at the beginning of their professional careers
- Newcomers in the cement industry

Topics
Raw materials handling
Clinker production
- Main components of the rotary kiln plant
- Raw materials and fuels
- Burning conditions and their impact on clinker performance

Cement production
- Raw materials and cement grinding
- Common grinding systems
- Particle size distribution and product quality

Chemistry and mineralogy
- Clinker formation and clinker phases
- Hydration of cement

Concrete technology
- Mortar and concrete characteristics
- Strength and duarbility of concrete
- Role of admixtures in modern concrete production

Environmental issues
- Energy consumption
- Emissions / Emission abatement

13 - 17 November 2023

Location: Duesseldorf VDZ

2,750 € per participant

Further information and registration:
https://vdz.info/ccyes

Certificate

The participants will receive a certificate of attendance.

Crash Course Process Control

C-SIc

The SIMULEX® cement plant simulator for training plant supervisors, foremen, production personnel, control room operators and young engineers was developed by KHD Humboldt Wedag AG in cooperation with VDZ.
For over ten years VDZ has been using the simulator within the framework of training courses and has been continually supporting the further development of the system with practical input from the industry. The simulator provides a realistic reconstruction of a production plant with a state-of-the-art supervisory control and data acquisition system (SCADA).

Learning objectives
- Comprehensive knowledge of the plant control system in general and the main control circuits in particular.
- Better understanding of how the various sub-processes in the cement plant are interconnected.
- Understanding of the main control circuits in order to reach and maintain target values (e.g. energy consumption).
- Capability to react to process disturbances in a proper way and to develop a long-term control strategy.

Target groups
- Production personnel
- Control room operators
- Young engineers

Topics
- Heating up and operating the kiln
- Operation of the raw, cement and coal mills
- Optimising production
- Managing process disturbances and special situations

Methods
Presentations, interactive exercises, scenario-based training using the simulator, team work, group discussion.

Trainers
The training is led by highly skilled and experienced engineers.

19 - 21 February 2024

Location: Duesseldorf VDZ

1,375 € per participant

Further information and registration:
https://vdz.info/ccpc

Certificate
The participants will receive a certificate of attendance.

Energy Balances and Efficiency

S-EFI

This training will provide knowledge of how to conduct and evaluate cement kiln and mill trials. Kiln and mill examinations are carried out in order to gather data on the performance and to validate warranty performance data such as the output, the energy consumption, input/output ratio or the efficiency. They also provide a reliable foundation for the optimisation of individual operational system components, the cement quality, the reduction of emissions levels and for assessment of material cycles and coating formations.

Learning objectives
Learn how to conduct and evaluate cement kiln trials and mill trials.

Target groups
- Production personnel
- Control room operators
- Young engineers

Topics
- Basics of conducting balances
- Planning, organisation and realisation of plant examinations
- Introduction into calculation of energy and mass balances
- Introduction into measuring techniques
- Case studies: Calculate an energy balance of a cyclone preheater plant, mass balance of a cyclone preheater plant
- Efficient mill operation (ball mill; roller press; VRM)
- Examinations of cement mills (focus on ball mills)
- Case studies: Ball mill examinations / audits
- Discussion of participants' specific questions and problems

Methods
Presentations, group discussion and experience exchange
One day cement plant visit
Training sessions: 9:00 - 17:00

Trainers
Highly skilled and experienced engineers.

Certificate
The participants will receive a certificate of attendance.

18 - 21 March 2024

Location: Duesseldorf VDZ

2,500 € per participant

Further information and registration:
https://vdz.info/ebae

Durability of concrete

W-DOC

Participants will get a comprehensive overview of concepts for ensuring the durability of concrete structures. In addition to the damage mechanisms the concrete technology and design elements as well as the execution are explained. On the basis of examples the influence of the cement on durability-relevant parameters is going to be explained. Performance concepts and the principles of service life design are also addressed. For the participants, it will be made possible to discuss their issues from operational practice.

Learning objectives

Provide deep knowledge of

- damage mechanisms,
- concrete technology and design elements and
- influences from the execution

with regard to the durability of concrete structures.

- Standards, regulations and verification concepts

Target groups

- Architects and designers, administrations
- Building consultants and concrete technologists from the building and building materials industry

Topics

- Basic requirements for durable concrete structures: Exposure, performance of the concrete, concrete cover, construction
- Durability of reinforced concrete, ensuring corrosion protection of the reinforcement
- Durability of the concrete: Achieving high freeze-thaw resistance with and without de-icer, avoidance of a damaging alkali-silica reaction
- Prediction of durability properties
- Performance-based concretes and durability design: from descriptive approaches to tested performance characteristics

Methods

Presentation, discussion

Trainers

The training is led by highly skilled and experienced engineers.

04 June 2024

Online seminar

600 € per participant

Further information and registration:
https://vdz.info/doc

Certificate

The participants will receive a certificate of attendance.

Customised and Online Training

Customised Training

Besides our open training courses, we offer a wide range of customised training courses, seminars and workshops. During over 60 years' teaching activity we have conducted numerous tailor-made training courses and seminars for cement producers and national or international organisations around the globe. The biggest advantage of this kind of training is that the topics, duration and the level of difficulty can be tailored to fit the customer's needs to provide maximum practical benefit.

Target groups

- Production personnel
- Laboratory managers
- Qualified cement plant specialists
- Young and experienced engineers
- Managers and decision makers in the cement industry

Topics (examples)

- Basic raw material preparation and homogenisation
- Basic/Advanced training in clinker production
- Basic training in alternative fuels and raw materials
- Advanced training in resources and energy efficiency
- Basic training in BAT, e.g. burners, grinding plants
- Basic cement chemistry and mineralogy training industrie
- Basic/Advanced training in grinding technologies
- Energy efficiency
- Measurement techniques and process automation
- State-of-the-art technologies in environmental protection, e.g. dust, CO_2, SO_2, NOx, trace elements
- Advanced training in energy consumption and management
- Basic training in emission abatement
- Basic/Advanced cement plant maintenance training
- Basic product quality and quality management training
- Advanced training on quality assurance and European standards (e.g., EN 196)
- Basic training in XRF analysis
- Basic training in technical and others

On request
Costs depend on topic, duration and location.
Number of participants (min. - max.) 10 – 20
Further information: https://vdz.info/ctcaw

Almost all seminars listed in this flyer can be booked as inhouse trainings.

Duration

From one day to several weeks. Final tests can be offered on request.

Trainers

The training is led by highly skilled and experienced engineers. Depending on the topic external experts will be involved.

Certificate

The participants will receive a certificate of attendance.

VDZ Learning Platform Cement/Concrete/Lime

E-LPF

The learning platform "cement-academy.org" offers VDZ online courses on cement and lime production and topics related to concrete technology. Almost 70 different courses with more than 150 hours of training material in total can be accessed.

The online courses are practice-oriented, up-to-date and multimedia-based. In addition to texts, images and videos, they also offer interesting animations in order to make complex issues easier to understand and enable plants to be operated in a safer and more environmentally friendly way. At the end of the courses, participants have the opportunity to check their knowledge and close any gaps through questions and tests. When a test has been successfully completed, the participant automatically receives a corresponding certificate as confirmation.

Target groups

- Industrial-technical employees
- Apprentices and trainers
- Young engineers
- Employees from the supplier industry

Topics

Cement Production

- Raw material extraction and handling
- Clinker and cement production
- Loading, packaging and transportation
- General plant equipment
- Environmental protection
- Quality control

Lime Production

- Washing and sieving
- Basics of lime kiln technology
- RCE kiln
- DCR kiln
- Ring shaft kiln
- Lime rotary kiln

Concrete technology

- Concrete technology basics
- Fresh and hardened concrete
- Cement application
- Concrete admixtures

For more details on the content, visit https://cemenent-adacemy.org

Methods

Time and location-independent network-based learning.

Certificate

After successfully completed computer-based test an automatically generated confirmation can be downloaded for each online course.

Prices for cement and concrete courses

650 € single license
2,850 € license for 5 learners
4,900 € license for 10 learners
21,000 € license for 50 learners
35,000 € Flatrate (150 learners)
Further information: https://cement-academy.org

Prices for lime courses

The lime courses can be purchased as a triple licence at a price of 2,600 € individually or as a package. For a higher number of licences, we will submit an individual offer.

General Conditions for Participation in VDZ Education and Training Programme

Registration

Registrations can only be made online via the VDZ website www.vdz-online.de/en/training. All current registration deadlines are shown on the website. Participants will receive written confirmation of their registration.

Participation fee

The participation fee includes training sessions, training course documentation, lunches, beverages and coffee breaks during the training sessions, one social event and presentation of certificates. The participation fee also includes the services that are listed in the respective descriptions of the training courses and seminars. If not stated differently, the general regulations under “Accommodation” apply.

VAT applicability:

Invoices issued to recipients in Germany: The standard German rate of VAT, currently 19%, will be applied.

Invoices issued to recipients in other EU countries: VAT will not be applied, if the recipient provides a valid VAT registration number (reverse charge rule according to Art. 196, 205 EU-Directive 2006/112).
Invoices issued to recipients in non-EU countries: VAT will not be applied. A certificate of tax residence is required.
The above-mentioned VAT application rules apply to participation in VDZ seminars and training courses only.

Accommodation

If not stated otherwise in the descriptions of the courses, accommodation as well as the participants' travel costs are not included in the participation fee. VDZ will provide hotel recommendations, but the participants have to book their hotel accommodation by themselves. In the event of cancellation of a room reservation the terms and conditions of the hotel apply.

Payment

Participants will receive an invoice (after registration) which is payable immediately upon receipt by bank transfer or cheque. Payment will be accepted in Euros only.

Cancellations by VDZ

If an event is cancelled by VDZ, participants are entitled to a full refund of their participation fee. If one of courses, training and seminars is cancelled, participants will be informed by VDZ at least 4 weeks prior to the first day of the training.

Cancellations by the customer

Participation fee will be refunded for cancellations made in writing up to 14 days prior to the event. No refund will be made for cancellations received after this date.

Changes and general rules

VDZ reserves the right to change the course programme and agendas and to cancel events in case of insufficient bookings or other circumstances beyond VDZ‘s control. VDZ is not responsible for any other loss incurred by a participant as the result of the cancellation or amendment of an event by VDZ. These terms and conditions are governed by German law.

Duesseldorf, October 2022

Impressions

VDZ conducts its trainings at various locations: at VDZ in Duesseldorf, at selected cement plants in Germany or at VDZ partners' premises.

When planning its trainings VDZ pays great attention to the timeliness and urgency of the topic as well as the relevance for the praxis of each training or seminar.

Trainings are conducted by experienced lecturers because the learning success and the satisfaction of the participants are very important for us.

Further information and registration:
https://www.vdz-online.de/en/training

Cement plant visit

Practical excercises in a refractory company

Graduation ceremony in the Foremen Course

Class room training

Visiting VDZ laboratories

Cement plant visit

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