



Gesellschaft für Schweißtechnik
International mbH

joined for welding

DVS



EDUCATIONAL PROGRAMME

Training Courses
Seminars

2011

PREFACE

Updating Your Knowledge in Welding through Education and Training

Lifelong learning continuously is a requirement for every person being involved in modern industry. Therefore GSI offers again updated courses in the fields of welding and testing. Modern concepts like distance learning or blended learning are for sure integrated parts of our education and training activities.

This Educational Programme 2011 is again only an extract from our approximately 200 seminars which we offer in our worldwide training institutes and welding schools. Locally also other courses are offered in Polish, Czech, Turkish, Arabic, Russian and Chinese language.

All courses are adjusted to different levels of our students from the welder even using the virtual training up to the welding engineer.

Please contact us directly. We are would like to assist you according to your needs.

Wish you come here!



Dr.-Ing. Steffen Keitel
Managing Director



ppa. Dipl.-Ing. Christian Ahrens
Managing Director
Foreign Business

GSI – Gesellschaft für Schweißtechnik International mbH
Duisburg, August 2010



Our Training in and for Foreign Countries

Our customers may also inquire our competence in foreign countries. In Poland, in Czech Republic, in Turkey, in Egypt, in Estonia, and in China you can ask our staff in the local branches regarding all questions of education and training. The addresses please find at the end of this catalogue. You may also directly put your question to our Managing Director for Foreign Business
Please contact: Christian Ahrens at ahrens@gsi-slv.de or +49 203 3781-131

In 2009/2010 we have been active in education and training for customers in

- Brazil
- China
- Columbia
- Czech Republic
- Egypt
- Ethiopia
- Estonia
- Indonesia
- Korea
- Latvia
- Lithuania
- Netherlands
- Portugal
- Saudi Arabia
- Turkey

We offer all our seminars:

- in German or English language
- some seminars also in Arabic, Chinese, Polish, Russian, Czech or Turkish language
- also in house courses tailor made on the requirements of your enterprise can be developed
- beside these theoretical courses and seminars we also offer practical training in either your facilities or in our own workshops. Our training catalogue covers the main manual processes for welders and welding instructors as well as the training of welding operators

Additionally you can apply for Distance Learning Courses for becoming International Welding Engineer, International Welding Technologist or becoming International Welding Specialist.

These courses are offered in the following languages:

- Dutch
- English
- French
- German
- Italian
- Turkish

Please also ask for our complete catalogue in German language or for our NDT Training catalogue.



ppa. Dipl.-Ing. Christian Ahrens
Managing Director
for Foreign Business

GSI – Gesellschaft für Schweißtechnik International mbH
Duisburg, August 2010





TRAINING COURSES

FOR PERSONNEL WITH
RESPONSIBILITY FOR WELDING COORDINATION



TRAINING COURSES

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All courses are free of VAT and valid until 31.12.2010, but subject to alterations.





IIW-Training Courses for Personnel with Responsibility for Welding Coordination

Contents

Welding processes have been used to a large extent to the manufacture of industrial products while having a key position in the production in many companies. There is a wide range of welded structures from pressure vessels up to housecraft and agricultural machines including cranes, bridges and other components. Welding has a decisive influence on the manufacturing costs and the quality of the products. Therefore, it is important to perform the welding works to be carried out as effectively as possible and to provide adequate supervision of all connected activities. Well trained specialists can assure the product quality of welded structures through the well-aimed selection of adequate welding and testing equipment and an economic welding technology.

National and international standards and guidelines determine the tasks and responsibilities in an internationally harmonised system of education, examination and certification. Due to this, conformity of the welded products and education services for the European and international market can be assured. The manufacturers of welded products must have competent welding coordinators according to EN ISO 14731 for the purpose of the welding personnel receiving the necessary welding and working instructions and the whole scope of work being carefully executed and supervised.

Tasks and responsibilities of the welding coordinators have been set forth in EN ISO 14731. Welding coordinators depending on the type and/or complexity of manufacture can be assigned according to the groups stated in the following with the International Institute of Welding (IIW) having determined recommendations for the minimum requirements on welding coordinators:

- **Welding Coordinator with comprehensive technical knowledge:**
INTERNATIONAL WELDING ENGINEER (IWE)
Unlimited tasks and responsibilities
- **Welding Coordinator with special technical knowledge:**
INTERNATIONAL WELDING TECHNOLOGIST (IWT)
Tasks and responsibilities for a selected or limited field
- **Welding Coordinator with basic technical knowledge:**
INTERNATIONAL WELDING SPECIALIST (IWS)
Tasks and responsibilities for a limited field of simple structures

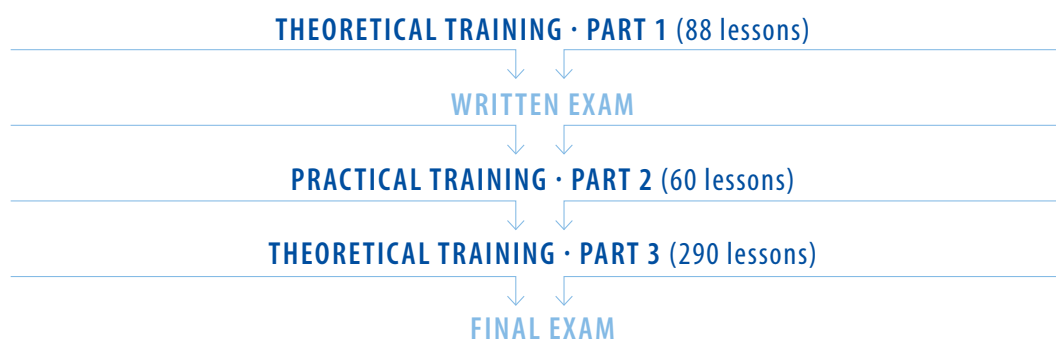




IIW-Training Course International Welding Engineer acc. to Guideline IAB-252-07 The Welding Engineer – Guarantor of Quality Assurance in Welding

Engineers with comprehensive knowledge in welding are necessary from design to manufacture, in order to fulfil the extensive tasks when designing bridges, pressure vessels, steam boilers, steel structures, vehicles for use in water, air, space and on rail as well as the construction of machines, installations and pipelines.

Required Qualification	Graduate, and B.Eng. or M.Eng. at a university, technical school, university of applied sciences or technical college on a technical subject or graduate as B.Sc. and M.Sc. on a technical subject. Participation in a training course is also possible for university graduates without professional experience. It is, however recommendable to have obtained at least one year of experience in a job.
Training Programme	The training course for welding engineers (438 lessons) is divided into 3 parts and 4 modules:
Parts 1 and 3	<i>Theoretical Training</i> The IWE-course Part 1 can be taken as a distance learning course. The IWE course Part 3 can also be taken as a blended learning course (distance learning combined with classroom learning).
Module 1	<i>Welding Processes and Equipment</i> (93 lessons) Autogenous technology, cutting, power sources, arc welding, shielded arc welding, submerged arc welding, resistance welding, special welding processes, spraying, soldering and brazing, joining, automation
Module 2	<i>Materials and their behaviour during Welding</i> (111 lessons) Steel production, alloys, thermal treatment, formation of cracks, corrosion, wear, non-iron metals, metallography
Module 3	<i>Design and Construction</i> (64 lessons) Strength of materials, calculation of weld seams, design, construction, behaviour of welded joints exerted to different loads, and fracture mechanics
Module 4	<i>Production Engineering and Application Technology</i> (110 lessons) Quality assurance, welders examination, welding procedure specification, working safety, internal stresses and distortion, workshop equipment, non-destructive testing, economic efficiency, repair welding, case studies
Part 2	<i>Practical Training</i> (60 lessons) Gas welding, arc welding, gas-shielded metal arc welding, tungsten inert gas welding, presentation of other welding processes
Exams	<i>Written and Oral</i> (11 hours)
Completion of the course	After having passed the exam, the participant will receive a diploma International Welding Engineer.
Fee	13.510,00 € (incl. exams)



Venue	Date	Contact	Phone / Fax	Email
Duisburg	2011-05-09 – 2011-05-28 2011-11-02 – 2011-12-01	Frank Moll	+49 203 3781-252 +49 203 3609-003	moll@slv-duisburg.de

Date gives the starting date of Practical training Part 2. Previously Part 1 of the course and the intermediate examination have to be finished. It is recommendend to start the distance learning Part 3 not later than 01 March 2010.



IIW-Training Course International Welding Technologist acc. to Guideline IAB-252-07 The Welding Technologist – Expert on many fields of Welding

Welding technologists are required in the same industrial sectors as welding engineers – from design to manufacture. In medium- and small sized companies they are often the responsible welding coordinators, in larger companies they are often the deputies of the welding engineers.

Required Qualification Examination as a technician at an approved technical school or qualification of participation in the course of welding engineer.

Training Programme The training course for welding technologists (338 lessons) is divided into 3 parts and 4 modules:

Parts 1 and 3 *Theoretical Training*

The welding technologist-course Part 1 can also be taken as a distance learning course. The welding technologist course Part 3 can also be taken as a blended learning course (distance learning combined with classroom learning).

Module 1 *Welding Processes and Equipment* (76 lessons)

Autogenous technology, cutting, power sources, arc welding, shielded arc welding, submerged arc welding, resistance welding, special welding processes, spraying, soldering and brazing, joining, automation

Module 2 *Materials and their behaviour during Welding* (82 lessons)

Stahlherstellung, Legierungen, Wärmebehandlung, Rissbildung, Korrosion, Verschleiß, Nichteisenmetalle, Metallographie

Module 3 *Design and Construction* (40 lessons)

Strength of materials, calculation of weld seams, design, construction, behaviour of welded joints exerted to different loads, and fracture mechanics

Module 4 *Production Engineering and Application Technology* (80 lessons)

Quality assurance, welders examination, procedure specification, working safety, internal stresses and distortion, workshop equipment, non-destructive testing, economic efficiency, repair welding, case studies

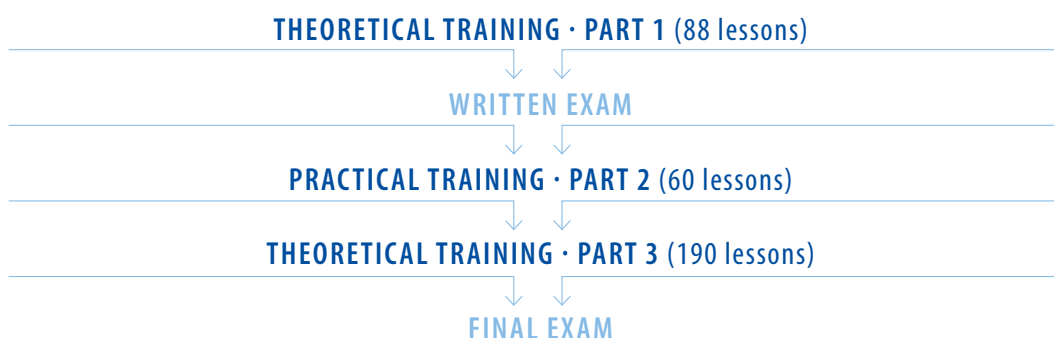
Part 2 *Practical Training* (60 lessons)

Gas welding, arc welding, gas-shielded metal arc welding, tungsten inert gas welding, presentation of other welding processes

Exams *Written and Oral* (9 hours)

Completion of the course After having passed the exam, the participant will receive a diploma *International Welding Technologist*.

Fee 10.390,00 € (incl. exams)



Venue	Date	Contact	Phone / Fax	Email
Duisburg	2011-05-09 – 2011-05-28 2011-11-02 – 2011-12-01	Frank Moll	+49 203 3781-252 +49 203 3609-003	moll@slv-duisburg.de

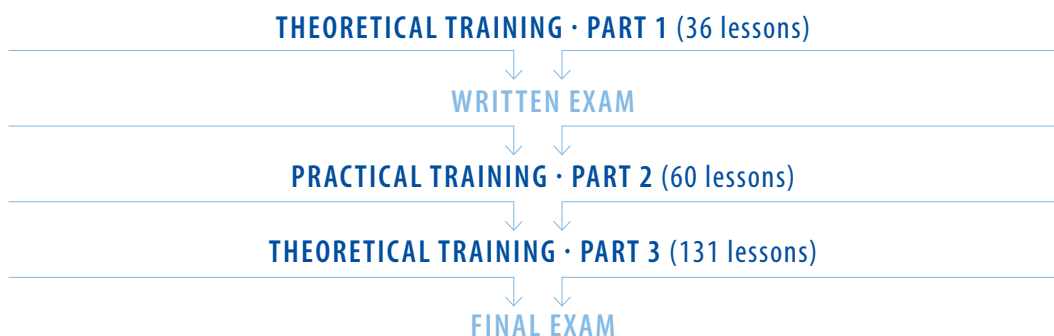
Date gives the starting date of Practical training Part 2. Previously Part 1 of the course and the intermediate examination have to be finished. It is recommendend to start the distance learning Part 3 not later than 01 March 2010.



IIW Training Course International Welding Specialist acc. to Guideline IAB-252-07 The Welding Specialist – the Practice Oriented Welding Coordinator

In small- and medium sized companies welding specialists may function as the responsible welding coordinators. In large companies they are the link between the welding engineer and the high quality execution of the welding work.

Required Qualification	<i>Part 1:</i> Master in a metal processing trade, industrial master, technician with an approved diploma or graduated engineer.
Training Programme	The training course of the welding specialist (227 lessons) is divided into 3 parts and 4 modules:
Part 1 and 3	<i>Theoretical Training</i> The welding specialist-course Part 1 can also be taken as a distance learning course.
Module 1	<i>Welding Processes and Equipment</i> (45 lessons) Autogenous technology, cutting, power sources, arc welding, shielded arc welding, submerged arc welding, resistance welding, special welding processes, spraying, soldering and brazing, joining, automation
Module 2	<i>Materials and their behaviour during Welding</i> (47 lessons) Steel production, alloys, thermal treatment, formation of cracks, corrosion, wear, non-iron metals, metallography
Module 3	<i>Design and Construction</i> (22 lessons) Basics on strength of materials and the calculation of weld seams, design, construction, behaviour of welded joints exerted to different loads
Module 4	<i>Production Engineering and Application Technology</i> (53 lessons) Quality assurance, welders examination, procedure specification, working safety, internal stresses and distortion, workshop equipment, non-destructive testing, economic efficiency, repair welding, case studies
Part 2	<i>Practical Training</i> (60 lessons) Gas welding, arc welding, tungsten inert gas welding, presentation of other welding processes
Exams	<i>Written and Oral</i> (8 hours)
Completion of the course	After having passed the exam the participant will receive a diploma International Welding Specialist
Fee	7.490,00 € (incl. exams)



Venue	Date	Contact	Phone / Fax	Email
Duisburg	2011-05-09 – 2011-05-28 2011-11-02 – 2011-12-01	Frank Moll	+49 203 3781-252 +49 203 3609-003	moll@slv-duisburg.de

Date gives the starting date of Practical training Part 2. Previously Part 1 of the course and the intermediate examination have to be finished. It is recommendend to start the distance learning Part 3 not later than 01 March 2010.



IIW Training Course International Welding Inspection Personnel acc. to Guideline IAB-041-2001/EFW-450

Education of international welding inspection personnel joins the fields of welding and inspection engineering. The international welding inspection personnel offers the industry a coordinator/supervisor having double competence by fulfilling the demands on welding engineering and on inspection.

Required Qualification IWI-C: Direct start into the modules Welding Inspection possible for welding engineers or welding technologists (IWE/EWE or IWT/EWT diploma).
IWI-S: Direct start into modules Welding Inspection possible for welding specialist (IWS/EWS diploma) or welding practitioner (SWM diploma).

Training Programme IWI-C (97 lessons), IWI-S (63 lessons)
General Introduction to Welding Inspection and Materials Testing:
Mechanical tests on weld seams, determination of the composition as well as metallographic examination
Weld Seam Imperfections
Types of weld seam defects, evaluation of weld seam
Testing Methods
Overview on testing methods, visual testing, penetration testing, magnetic particle testing, radiographic testing, ultrasonic testing, other non-destructive testing methods, critical evaluation of the selection of non-destructive testing methods, other methods.
Quality Assurance
Execution of Quality Assurance
Practical Training

Exams *Written and Oral* (IWI-C 5,5 hours, IWI-S 4,5 hours)

Completion of the course After having passed the exam the participant will receive a diploma **International Welding Inspection Personnel**. In coordination with the authorised certification boards the precondition of a certification according to EN 473 can be given by partially acknowledging individual training modules of the IWIP and a certain additional training.

Fee IWI-C (Module Welding Inspection incl. exam) 3.850,00 €
IWI-S (Module Welding Inspection incl. exam) 3.225,00 €

Venue	Date	Contact	Phone / Fax	Email
Duisburg	2011-11-07 – 2011-11-24	Frank Moll	+49 203 3781-252 +49 203 3609-003	moll@slv-duisburg.de



Distance Learning Courses – Blended Learning – eLearning

The following courses and parts of courses, respectively will also be offered as distance learning courses-

- Welding Engineer Part 1
- Welding Technologist Part 1
- Welding of Stainless Steel
- Cost Aspects in Welding Production

Furthermore, the following courses and parts of courses, respectively will also be offered as blended learning courses (approx. 50 % as distance learning and 50 % as classroom learning):

- Welding Engineer Part 3
- Welding Technologist Part 3

elearning means that the participants save time by not travelling to the SLV over several weeks and receiving training there at fixed hours. For participants working on a job there are the following advantages: no travelling time and fares, no time-related stress, possibly not giving away your days off, no absence from the company you are working with. For participants having long distances to travel there won't be any costs for accommodation and expenses. You can study whenever you want, wherever you want (in most of the cases at home) and as long and quickly as you want. Time planning is free, no binding to time schedules of lectures held. Stopping for the weekend or a short holiday is always possible without interruption of the course.

Classroom lessons serve to extend your knowledge and enhance the personal contact to the lecturer and the other students.

In laboratory lessons and case studies the theoretical knowledge is transferred into practice. In addition, an exchange of information will be taken via email, the forum or by phone. Of course, the participant of the distance learning course must have a multi-media computer with access to the Internet.

Venue	Date	Contact	Phone / Fax	Email
Duisburg	anytime	Frank Moll	+49 203 3781-252 +49 203 3609-003	moll@slv-duisburg.de





DVS®-Training Course Welding Instructor acc. to Guideline DVS 1157 Skilled Welder with Universal Skills and Practice Related Knowledge

Skilled welder with the qualification of advancement to welding instructor, welding specialist or executive function on a master level. Can be entrusted in extensive and responsible fields of activity.

Required Qualification Three years of practice on the job, minimum 19 years, valid welders' certificate according to EN 287, G, E, WSG or MSG, Ø 70...180, t4...6; BW-PC, -PF, FW-PF

Training Programme The training course for welding instructors (200 lessons) is divided into 4 parts and 4 modules:

Part 1 *Theoretical Training* (36 lessons)

Part 2 *Practical Training* (120 lessons)

Part 3 *Theoretical Training* (32 lessons)

Module 1 *Welding Processes and Equipment* (24 lessons)

Introduction to welding engineering, special autogenous processes, gas welding, manual arc welding, MIG/MAG welding, electrical engineering, the arc, power sources, thermal cutting, soldering and brazing.

Module 2 *Materials and their behaviour during Welding* (23 lessons, *8 lessons)

Production and designation of steel, material testing, structure and properties of metals, alloys and phase diagrams, general structural steels, fine grain structural steels, thermal treatment (*non-iron metals)

Module 3 *Design and Construction* (8 lessons)

Welded joints, lay out of weld seams

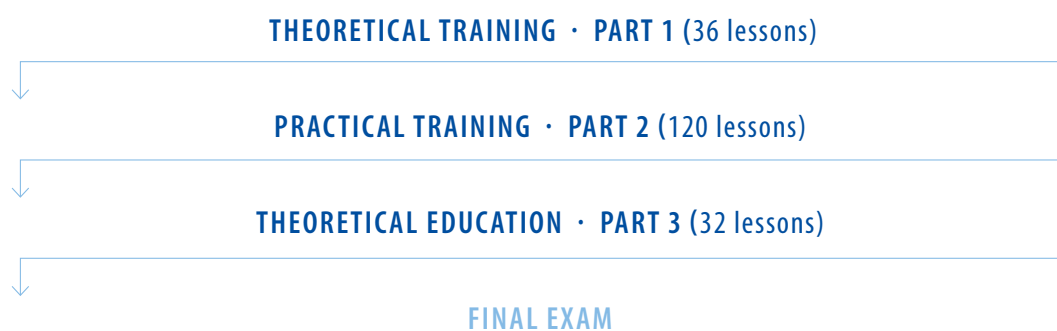
Module 4 *Production Engineering and Application Technology* (13 lessons)

Quality assurance, welders certificate, evaluation, welding instruction, internal stresses and distortion, working safety, measuring, controlling and recording of weld data, non-destructive testing

Exams *Written and oral as well as practical* (23 hours)

Certificate After having passed the exam the participant will receive a German certificate **DVS®-Welding Master.**

Fee	<i>Process G or E:</i>	8.650,00 € (incl. Exam)
	<i>Process WSG- or MSG-Stahl:</i>	9.100,00 € (incl. Exam)
	<i>Process WSG- or MSG-NE-Metall:</i>	9.985,00 € (incl. Exam)



Venue	Date	Contact	Phone / Fax	Email
Duisburg	on request	Rüdiger Neuhoff	+49 203 3781-136 +49 203 3609-003	neuhoff@slv-duisburg.de



DVS®- Training Course Resistance Welder – Operator acc. to Guideline DVS 2940

Participants Operators of resistance welding units

Contents During the course practical and theoretical skills on resistance welding of metallic materials will be taught. The operator of resistance welding of metallic materials is the competent expert of resistance welding. He has the skills and proficiency for the execution of quality assured work on the field of resistance welding. Guideline DVS 2940 is applicable for partly and fully automated resistance welding in the processes: resistance spot welding (RP), resistance seam welding (RR) and resistance projection welding (RB). The lectures and practical training are divided as follows: Overview of the processes, principles of electrical engineering, spot welding, projection welding and seam welding, electrodes, welding controls, resistance welding of galvanized sheets and of aluminium, working safety, machines, devices, welding tools and maintenance, inspection of the welded joints, quality assurance. This training course serves as an ideal basis for attending the follow-up courses "Resistance welding of galvanized sheets", "Projection welding", "Resistance welding of aluminium", "Exchange of experience on resistance welding", "Control and measuring techniques".

Note Please bring your working clothes with you

Duration 6 days

Fee 3.950,00 €

Venue	Date	Contact	Phone / Fax	Email
Duisburg	on request	Stefan Schreiber	+49 203 3781-224	schreiber@slv-duisburg.de

WELDING · JOINING · CUTTING

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WELDING · JOINING · CUTTING

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All courses are free of VAT and valid until 31.12.2010, but subject to alterations.





MIG Welding of Aluminium and Aluminium Alloys Theory and Practice

Participants Qualified MIG/MAG welders, operators of fully-mechanised welding units, welding coordinators

Contents The particular characteristics of aluminium and aluminium alloys make high demands on the welding personnel. It is particularly difficult to cope with the molten pool due to the occurring high oxidation grade as well as the elevated solidification speed. Due to this, there is the risk of lack of fusion and of non-admissible pores. In this seminar the theoretical basic knowledge on parent and filler metals, shielding gases and the pertinent periphery will be taught. The focus, however will be laid on the practical training. The objective of the seminar is to reduce the problems specific to the material and the product during MIG welding of Al-materials and simultaneously increasing the productivity and weld seam quality. To this end, butt, fillet and overlap welds for different sheet thicknesses and aluminium alloys with variable filler metals and shielding gases will be welded to test pieces applying the required parameters. One special aim is the generation of optimized parameters assuring a safe production of short welded joints – as frequently appearing in manufacture.

Note Welder´s helmet and protective clothing are included in the fee.

Note 3 days

Fee 2.185,00 €

Venue	Date	Contact	Phone	Email
Duisburg	on request	Franz Bültmann	+49 203 3781-179	bueltmann@slv-duisburg.de



Welding · Joining · Cutting



Education of Operators for the Submerged Arc Welding Process and Qualification according to DIN EN 1418

Theory and Practice

Participants Qualified welders, operators of submerged arc welding units, welding coordinators.

Contents Damages due to incorrect welding are much higher than the cost for the education and training of welders, welding coordinators and operators of fully mechanised welding processes. In this course, theoretical and practical knowledge on submerged-arc welding are taught. The course is concluded by a theoretical and practical exam according to DIN EN 1418. The course, however can be attended without doing the exam. It is directed to welders, foremen, masters but also to welding coordinators who want to acquire knowledge on the process.

Note Protective clothing are included in the fee.

Duration 3 days

Fee 2.185,00 €

Venue	Date	Contact	Phone	Email
Duisburg	on request	Franz Bültmann	+49 203 3781-179	bueltmann@slv-duisburg.de



Education of Operators for Fully Mechanised Gas Metal Arc Welding Units and Qualification according to EN 1418

Participants Qualified MIG/MAG welders, operators of fully mechanised welding units, welding coordinators

Contents Gas metal arc welding – divided up in the processes MIG and MAG – is a welding process requiring specific knowledge of the welder and particularly of the fitter of the unit for welding on mechanised welding units. For enhancing the productivity, MIG welding is more and more applied in a fully mechanised manner. Insufficient knowledge about the limits of this high performance welding process, however, lead to undesired weld seam imperfections which partly become apparent during a subsequent quality control resulting in considerable costs. The characteristics typical of the processes and the type of the weld seam imperfections are shortly explained in lectures, to transfer the effects of selected changes of the parameters into practice during the later practical training. In order to achieve defined weld seam qualities and weld geometries as well as to securely avoid lack of fusion and pores, the relation of deposition efficiency and welding speed must be known in correlation of the torch position. The education may be completed by an examination according to EN 1418 “Approval testing of welding operators for fusion welding”.

Note Please bring a welding helmet and protective clothing with you.

Note 3 days

Fee 2.500,00 €

Venue	Date	Contact	Phone	Email
Duisburg	on request	Franz Bültmann	+49 203 3781-179	bueltmann@slv-duisburg.de



Welding · Joining · Cutting



Robotic Gas Metal Arc Welding: No Problem ?

Participants Operators of welding robots, welding coordinators, fitters, production planners

Contents The state-of-the-art performance of the robotic systems used in welding processes together with the relevant power sources today enables high-quality welding performance as well as seam qualities. The technical and economic advantages can, however only be used to their optimum if the unit operator is aware of the basics of programming and of the special welding parameters in robotic gas metal arc welding. The seminar teaches the theoretical and practical background for recognising the influences of welding errors in running production and for being able to minimise them based on the resulting weld seam appearance. The course has been designed in such a way that the theoretically taught knowledge and possibilities of errors are intensified by practical training and demonstrations. The objective of this seminar is to offer the interested participant important impulses on improving and optimising the welding quality and efficiency when welding using a robot. Minor sample parts can be processed upon prior agreement during the workshop accompanying the seminar. The seminar is predominantly addressed towards operators of robotic welding units but also to welding coordinators and designers to obtain important information on achieving the optimised welding process.

Note Please bring a welding helmet and protective clothing with you.

Duration 3 days

Fee 2.800,00 €

Venue	Date	Contact	Phone	Email
Duisburg	on request	Franz Bültmann	+49 203 3781-179	bueltmann@slv-duisburg.de

ADHESIVE BONDING

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ADHESIVE BONDING

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All courses are free of VAT and valid until 31.12.2010, but subject to alterations.





EWF Training Course European Adhesive Bonder (EAB), acc. to Guideline EWF 515-01

Participants Staff from manufacture and assembly as well as staff from the dispatching department entrusted with adhesive bonding work

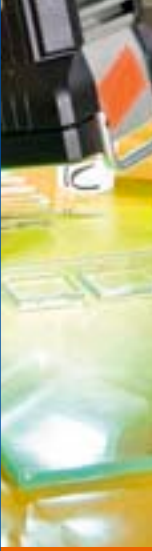
Contents In operational practice sometimes problems occur during the manufacture of bonded joints. Marginal conditions that can be neglected in conventional joining processes will be of essential importance then. If those conditions are not observed, poor bonded joints result that will be either claimed by the customer, require re-work or will be rejected.

The participants will be trained to skilfully execute bonding work according to the instructions given. The knowledge learnt in the theoretical lessons will be applied and experienced in the practical training. Intensive interlinking of theory and practice will lead to understand the connection of bonding compared to the traditional joining techniques, thus helping to avoid faults in production. The education is concluded by a practical and theoretical exam in the presence of an independent examination board of the DVS. After the passed exam, the participants will receive a certificate valid throughout Europe, which has been approved by the EWS.

Duration 5 days

Fee *Seminar:* 1.120,00 €
Exam: 195,00 €

Venue	Date	Contact	Phone	E-mail
Übach-Palenberg	on request	Anette Detert	+49 2451 971-202	anmeldung@tc-kleben.de



Adhesive Bonding



EWF Training Course European Adhesive Specialist (EAS), acc. to Guideline EWF 516-01

Participants Supervisors/Coordinators from the fields of construction, development, production, planning, quality assurance, laboratory and dispatch

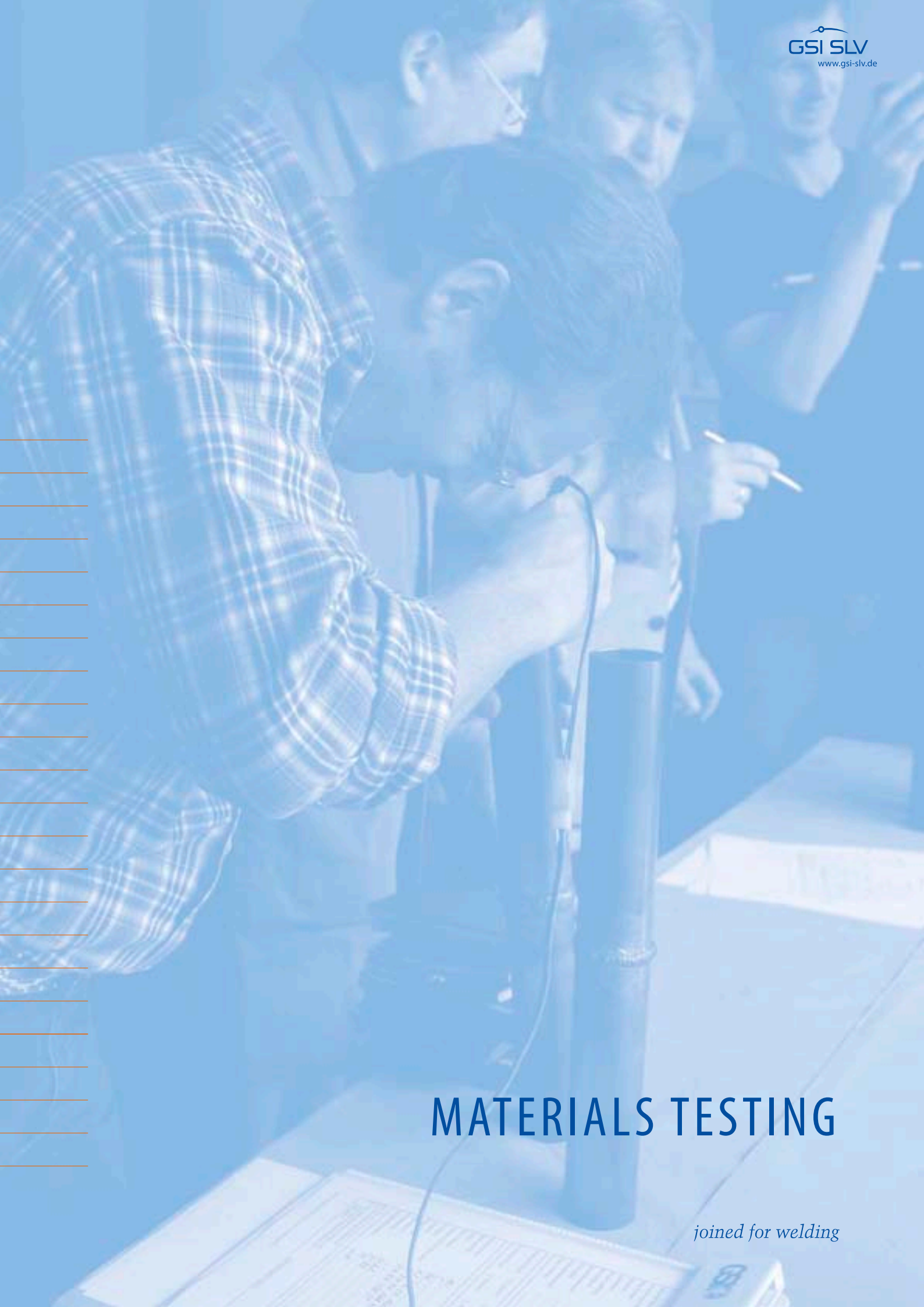
Contents The violent development in chemistry and materials engineering has enabled a variety of product and process innovations through the application of bonding. For making use of the potential and for optimization of production sequences the knowledge of elementary correlations is indispensable. Within the course of this training these correlations will be taught. Theoretical knowledge will be supplemented by practical work in the laboratory, in order to "handle" the knowledge obtained. Thus, the participants will receive a close look into the world of bonding, which, after having concluded the education brings them into the position of being responsible for the supervision/coordination, designing adequate to bonding, performing a qualified selection of the bonding material and systematically recognizing the failures in the process chain of bonding work in manufacture. The education is concluded by a practical and theoretical exam in the presence of an independent examination board of the DVS. After the passed exam the participants will receive a certificate valid throughout Europe, approved by the EWS.

Duration 3 x 5 days

Fee *Seminar:* 1.220,00 € per week
Exam: 395,00 €

Venue	Date	Contact	Phone	Email
Übach-Palenberg	on request	Andrea Janke	+49 2451 971-203	anmeldung@tc-kleben.de





MATERIALS TESTING

joined for welding



MATERIALS TESTING

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Training Course Magnetic Particle Testing (MT) incl. Certification acc. to EN 473 Level 1 + 2	36

For the certification of the EN 473 courses within the GSI and the affiliated SLVs, a cooperation agreement has been concluded with the TÜV Nord, thus offering the opportunity to receive a certificate issued by the TÜV Nord. These certificates are widely accepted by trade and industry on an international scale in particular in the field of the pressure equipment directive. Through this agreement the separation of education and examination/certification is consistently taken into account with the contents of the courses and examinations optimally being coordinated by the close cooperation of the two partners. Furthermore, we offer you certifications complying with the system of the ASNT American Society for Non-Destructive Testing which is demanded essentially in America and out of Europe, respectively.

All courses are free of VAT and valid until 31.12.2011, but subject to alterations. The examination fees will be calculated on behalf the TÜV Nord and do not include VAT (19 % at present).





PREFACE NDT

NDT courses according EN 473 in English language

A lot of years already GSI is offering NDT courses in English language.

In the year 2011 the courses

- Dye Penetrant Testing (PT),
- Magnetic Particle Testing (MT) and
- Ultrasonic testing (UT)

will be a fixed component of our training program.

The English courses are interesting for German customers as well as for Foreign participants who are eager to learn the English terminology besides the testing method itself.

In addition to the fixed courses in this catalogue GSI is offering individual programs for groups.

For these individual programs it is possible to reduce the endurance of the course due to the already gained pre-knowledge based on trainings according to other training systems (e. g. ASNT TC 1A).

Another fixed component of the NDT courses is the training of the International Welding Inspector. Precondition for these courses is an adequate knowledge in the field of welding technique (e.g. Welding Engineer or Welding Specialist).

ppa. Dipl.-Ing. Christian Ahrens
Managing Director
Foreign Business

GSI – Gesellschaft für Schweißtechnik International mbH
Duisburg, August 2010



Training Course Ultrasonic Testing (UT) comprising Specialised Practical Training incl. Certification acc. to EN 473 Level 1

Participants Inspection personnel

Contents For the evaluation of internal imperfections on the most various components, ultrasonic testing is a proven method of non-destructive testing. The physical and technical fundamentals such as the generation of sound and its propagation, built-up of probes and ultrasonic devices, adjusting of test devices will be treated in lectures and practical training. Emphasis will further be laid on the verification of the testing systems and mastering of regulations and standards. The participant will obtain the skills for testing plain components made of steel and other materials. Based on test instructions, the measurement of wall thickness, testing of sheets, measuring of the speed of sound, detecting of imperfections as well as simple evaluations of the results will be performed. For obtaining the transfer into practice, the specialised practical training UT 1 is recommended. An examination according to DIN EN 473 considering the pressure equipment directive 97/23/EG will be performed.

Note Knowledge corresponding to that of a skilled worker in a technical profession, if possible in metal processing, is desirable. In case of proving the required experience on the field of radiographic testing and the physical aptitude (eye test), the certification of the participant can be issued.

Duration

<i>Training:</i>	5 days
<i>Practical Training:</i>	4 days
<i>Examination:</i>	1 day

Fee

<i>Training:</i>	2.215,00 €
<i>Practical Training:</i>	1.840,00 €
<i>Examination/Certification:</i>	625,00 €

Venue	Date	Contact	Phone	Email
Duisburg	2011-07-11 – 2011-07-22	Helmut Schmeink	+49 203 3781-155	schmeink@slv-duisburg.de



Training Course Penetrant Testing (PT) incl. Certification acc. to EN 473 Level 1 + 2

Participants Inspection personnel

Contents For detecting surface imperfections (cracks, pores) on components such as weld seams, cast parts, ceramics, penetration testing has proven to be a simple, cost efficient and highly sensible test method. During the course, the contents of levels 1 and 2 will be taught. The physical-chemical and technical fundamentals will be presented in lectures and practical training. At the same time, knowledge on the objects will be taught, in order to understand the properties typical of the process for performing tests on them. Emphasis of the training which to a large extent is practice oriented, will be laid on the use of testing techniques for various applications, the selection and verification of the applicable testing systems. Moreover, evaluation and recording of the indications as well as the development of test instructions will be taught. The examination will be carried out according to DIN EN 473 considering the pressure equipment directive 97/23/EG.

Note If the required experience on the field of penetration testing and the physical aptitude can be proven (eye test), certification of the participant according to DIN EN 473 can be issued.

Duration Course PT 1/2: 5 days + 1 day examination

Fee Course PT 1/2: 2.030,00 €
Examination/Certification: 515,00 €

Venue	Date	Contact	Phone	Email
Duisburg	2011-01-03 – 2011-01-07	Helmut Schmeink	+49 203 3781-155	schmeink@slv-duisburg.de





Training Course Magnetic Particle Testing (MT) incl. Certification acc. to EN 473 Level 1 + 2

Participants Inspection personnel

Contents For detecting cracks and lack of fusion on the surface of components made of ferromagnetic materials such as welded components, cast and forged parts, magnetic particle testing has proven to be a simple, cost efficient and highly sensitive test method. During the course, the contents of levels 1 and 2 will be taught. The physical and technological fundamentals will be presented in lectures and practical training. At the same time, object will be explained, in order to understand how to test them. Emphasis of the training, which to a large extent is practice oriented, will be laid on the use of testing techniques for various geometries, the development of test instructions in connection with suitable magnetising techniques and devices. Further emphasis will be laid on the evaluation and recording of indications.
Examination will be carried out according to DIN EN 473 considering the pressure equipment directive 97/23/EG.

Note Knowledge corresponding to that of a skilled worker in a technical profession, if possible in metal processing, is desirable. In case of proving the required experience on the field of radiographic testing and the physical aptitude (eye test), the certification of the participant can be issued.

Duration Course MT 1/2: 5 days + 1 day examination

Fee Course MT 1/2: 2.030,00 €
Examination/Certification Fee: 535,00 €

Venue	Date	Contact	Phone	Email
Duisburg	2011-01-17 – 2011-01-21	Helmut Schmeink	+49 203 3781-155	schmeink@slv-duisburg.de

CORROSION PROTECTION

• SURFACE TECHNOLOGY

joined for welding



CORROSION PROTECTION · SURFACE TECHNOLOGY

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All courses are free of VAT and valid until 31.12.2011, but subject to alterations.





EFW Training Course European Thermal Spraying Specialist (ETSS) acc. to Guideline EWF 459-06

Participants Supervising/coordinating personnel, foremen, executive on the field of thermal spraying

Contents High-quality and economic thermal spraying requires a special technical knowledge. Thermally sprayed layers are applied in many fields. The requirements to the quality of the sprayed layers are often very high. The necessary quality of the layer is only efficient if planning, execution and controlling of a thermally sprayed layer is performed by a skilled expert from the first draft until the last job. Within the scope of the common professional education the manifold details to be observed for expert spraying cannot be taught to the required extent. A supplementary education is required which has been created by the EWF – European Federation for Welding, Joining and Cutting – with the course of the European Thermal Specialist. This course is performed according to the training guideline DVS-EWF 1188 and is concluded by exams according to guideline DVS-EWF 1189.

Required qualification:

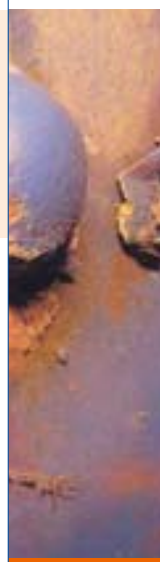
- a) Specific technical qualifications as a master in trade or industry, education either as a technician or engineer with a two-years of professional experience.
- b) EWF qualification acc. to training guideline (EWF 507) as European Thermal Sprayer (ETS) and min. 2 years of experience.
- c) Thermal Sprayer and 5 years of experience or qualification as a skilled worker in the metal processing trade and min. of 3 years of experience in a technology similar to spraying (skilled worker with certificate by the IHK – Industry of Trade and Commerce) as well as a minimum age of 22 years.

Note For participants fulfilling the required qualification according to b) and c) only a qualification test is required.

Duration 18 days

Fee on request

Venue	Date	Contact	Phone	Email
München	on request	Muriel Pertschitsch	+49 89 126802-10	pertschitsch@slv-muenchen.de



EWF Training Course European Thermal Sprayer (ETS) acc. to Guideline EWF 507-06

Participants Coaters, workmen, interested people in the field of thermal spraying

Contents Thermally sprayed layers are applied on many fields. The requirements to the quality of the sprayed layers are often very high. The necessary quality of the layer is only efficient if the personnel has been well trained and experienced.

The priority aim of employing qualified personnel is increasing the quality of the products and fulfilling the relevant regulations and guidelines concerning working safety and product liability.

Within the scope of the common professional education, the manifold details to be observed for expert spraying cannot be taught to the required extent. A supplementary education is required which has been created by the EWF – *European Federation for Welding, Joining and Cutting* – by the course of the European Thermal Sprayer. This course is performed according to the training guideline DVS-EWF 1197 and is concluded by exams according to DIN EN ISO 14918. The education as a thermal sprayer according to the EWF standard is acknowledged as complying with DIN EN ISO 14922 – quality requirements of thermally sprayed components.

Note Conditions of admission: Normal physical and mental capabilities. The knowledge of the English language, written and oral, should be as good as the participant can understand the information and instructions given in the course and can attend the theoretical exam. Basic skills of metal working should be present. If not, a corresponding practical basic education is recommended.

Duration	Module	Content	Lessons
	Module A	Theoretical Basics	13 lessons
	Module A1	Flame Spraying	7 lessons
	Module A2	Arc Spraying	7 lessons
	Module A3	Plasma Spraying	9 lessons
	Module A4	HVOF Spraying	7 lessons
	Module B	Practical Basic Education	14 lessons

Fee on request

Venue	Date	Contact	Phone	Email
München	on request	Muriel Pertschitsch	+49 89 126802-10	pertschitsch@slv-muenchen.de



Gesellschaft für Schweißtechnik
International mbH

- Company headquarters of GSI SLV
- Company headquarters of DVS
- Branches GSI SLV
- Cooperating Facilities of GSI SLV
- Further Facilities of GSI SLV





GUS/BALTIC STATES

CHINA

Kunshan

Further International Projects of the GSI:

- Branch of the GSI founded in Kunshan/China



- Training Center, SLV-GSI Polska, Zabrze/Poland



- NDT-training course in India



- GSI-Network in Russia



CONTACT DETAILS

Branches of GSI SLV

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