



European Welding Federation - Overview of 15 years of activity and future perspectives

L. Quintino*; **R. Ferraz****

* Professor at Lisbon Technical University, Portugal; EWF-IAB/IIW Secretariat - Chief Executive

** Mechanical Engineer, Head of Training Department at ISQ, Portugal; IAB Chief Executive

1. HISTORY OF EWF

In 1974, The European Welding Community felt the need of interchanging views and experiences, and created the European Council for Co-operation in Welding (ECCW) with the participation of Belgium, Denmark, Germany, France, Ireland, Italy, Netherlands and United Kingdom.

In 1992 the EWF- European Federation for Welding, Joining and Cutting was created and Membership of EWF enlarged with the participation of all countries from the European Community to the EFTA and Eastern European countries. This was the year where the guidelines for European Welding Engineer, Technologist and Specialist were approved and implementation started with the first Authorised National Body – ANB approved for Portugal, followed by Spain and the UK.

In 1994 EWF Training and Qualification System enlarged to European Welding Inspection Personnel, European Welding Practitioner and European MMA Welder and two years later the rules for the implementation of EWF Guidelines for the education, examination and qualification of welding personnel were approved

In 1996 the rules for the implementation of the Company Certification System were issued and the guideline for European Welder was approved and implemented.

In 1997 a formal agreement is signed between IIW and EWF to develop an International Qualification System based on the EWF System, observers became full members, bringing EWF to an organisation with 24 members. Weld-On – the first cooperation project approved under the Leonardo da Vinci programme started. Guidelines for European TIG Welder and Oxigas Welder were developed.

Two years later, IIW and EWF General Assemblies decided to create a Planning and Implementation Group for the development of the IIW structure to manage the IIW Qualification System. At this stage 21 ANBs were operating the EWF Training and Qualification System. The Guidelines for Special Courses in Laser Welding, Robot Welding and Welding of Reinforcing Bars were approved.

In 2000 the IIW Qualification System is formally established and the operation rules were issued based on the equivalent EWF documents.

The first IIW Guidelines were issued: International Welding Engineer, International Welding Technologist, International Welding Specialist and International Welding Practitioner

The first International ANB approved was China followed by Japan, Australia and USA

In 2001 EWF starts activity in the field of “Environment in Welding Fabrication”, developing the Environment Management System – EMS. The guidelines for European Welding Specialist for Resistance, European Thermal Spraying Practitioner and the European MMA Diver Welder were issued.

Database of EWF certified companies created in the EWF Website reached a total of 200 companies with the EWF certification.

In 2003 EWF activity in projects continued its development and participates in 3 EU collaboration projects (Euroweld, Continued, Netframe)

In the end of the 6th Framework Programme, EWF participated in 11 projects where 26 EWF members collaborated.

2. EWF TRAINING AND QUALIFICATION SYSTEM FOR WELDING PERSONNEL

The work aiming at the harmonisation of training and qualification of welding personnel in Europe started in 1980 with an analysis of the existing levels of education in welding in the EU and EFTA countries and, from the results, it was possible to define common harmonised levels of education, training and qualification.

The EWF Committee for Education and Training has prepared Guidelines for courses, giving the contents in terms of themes and keywords with minimum teaching times assigned to them. Access to the harmonised courses is allowed only to those who possess an appropriate general education, different for each country.

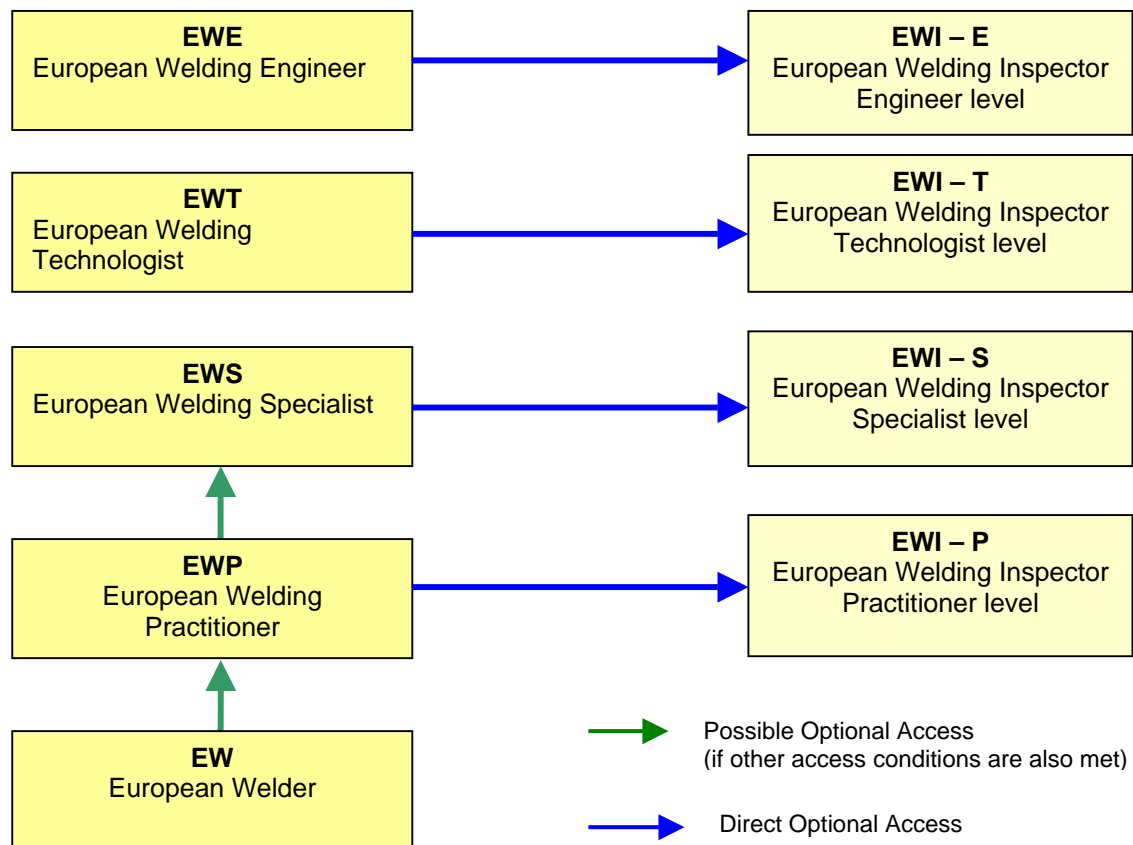


Figure 1 - EWF Training System for Welding Personnel

The harmonised courses, which are now offered in most European countries, combine both underpinning knowledge and application experience, thereby providing close links with industrial practice. After the main education, special courses for additional learning are offered in many special areas, thus providing a specific education still closer to the job function.

The EWF has always been aware that training and education are issues on which depends the future access of European industry – a well qualified work force avoids costly mistakes and is essential for customers’ confidence – and, on the other hand, the removal of technical barriers is a cornerstone in the building of the European market. Therefore, EWF keeps continuously in close contact with the development of industry, conducting surveys and analysis, which are used when updating the existing Guidelines or when implementing new ones.

Also aware of the importance of the mobility of labour within Europe, a lot of work has been put on the harmonisation of a standard examination system, to ensure that welding personnel trained in the EWF system is examined in a uniform way – so that those gaining a certificate in any Member State will have achieved the same minimum standard. A project for developing an Examination System, with the use of a common software system and databanks, is being implemented.

As the EWF work continues attentive to the actual industry needs, a new kind of courses has been created – the ‘Special Courses’. These are much shorter than the traditional EWF courses, very specific for a certain welding area, and do not establish rigid access conditions. At this moment, there are three approved Special Courses: for welding reinforcing bars (at the Specialist level), for laser welding and for robot welding (also at the Specialist level).

In 1998, EWF and IIW signed the first agreement of co-operation towards the development of a single international system for education and qualification of welding personnel. By use of a single syllabus for each type of training course and a central system of control of examinations, the same qualification may be awarded in any country.

In order to administer this system and to develop it still further, the IIW has established the IAB – International Authorisation Board. This organisation, aimed at the effective integration of the EWF and IIW systems and its implementation in all IIW countries, by publishing Guidelines for training syllabuses and examinations and implementing the Quality Assurance System controlling the scheme.

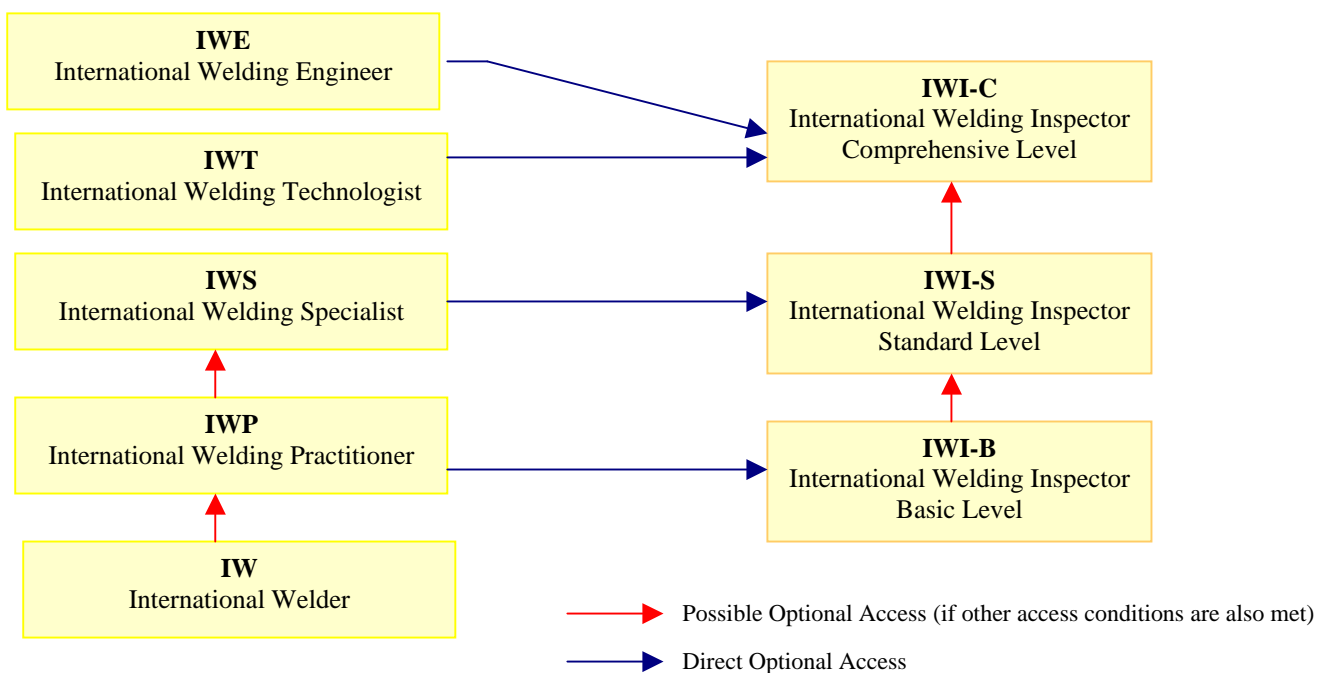


Figure 2 – International Training System for Welding Personnel

An Organisation, recognised by the National member, is appointed as the Authorised National Body (ANB) for the supervision of the scheme in each country. Representatives from these ANBs form the operational management within the IAB, electing Lead Assessors who ensure conformity of each ANB to agreed Rules.

The IAB membership comprises all the existent ANBs (34) and applicants ANBs (3) in a total of 37 countries. Until the end of 2006, a total of 36.197 IIW diplomas had been awarded and for EWF a total of 104.630 diplomas had been awarded until the end of 2006 (see figure 3).

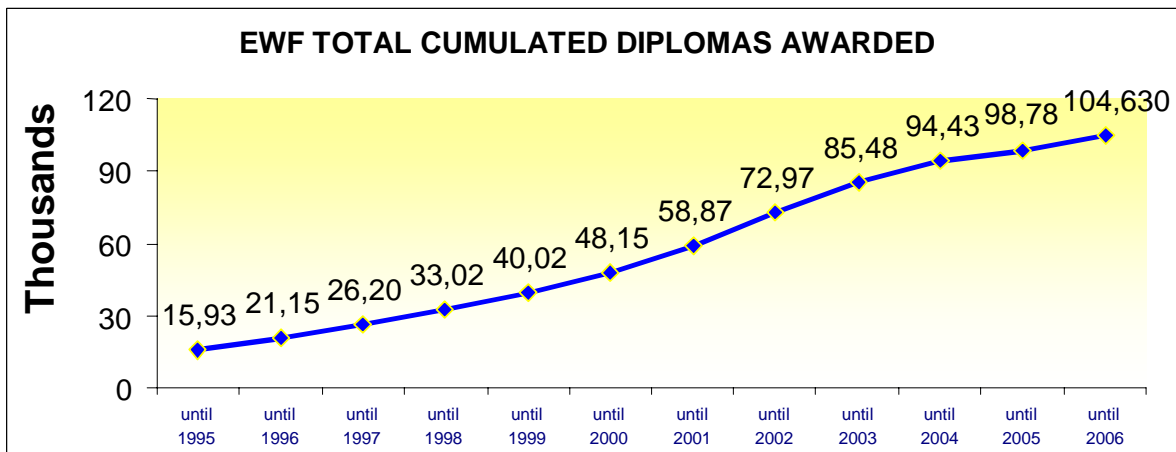
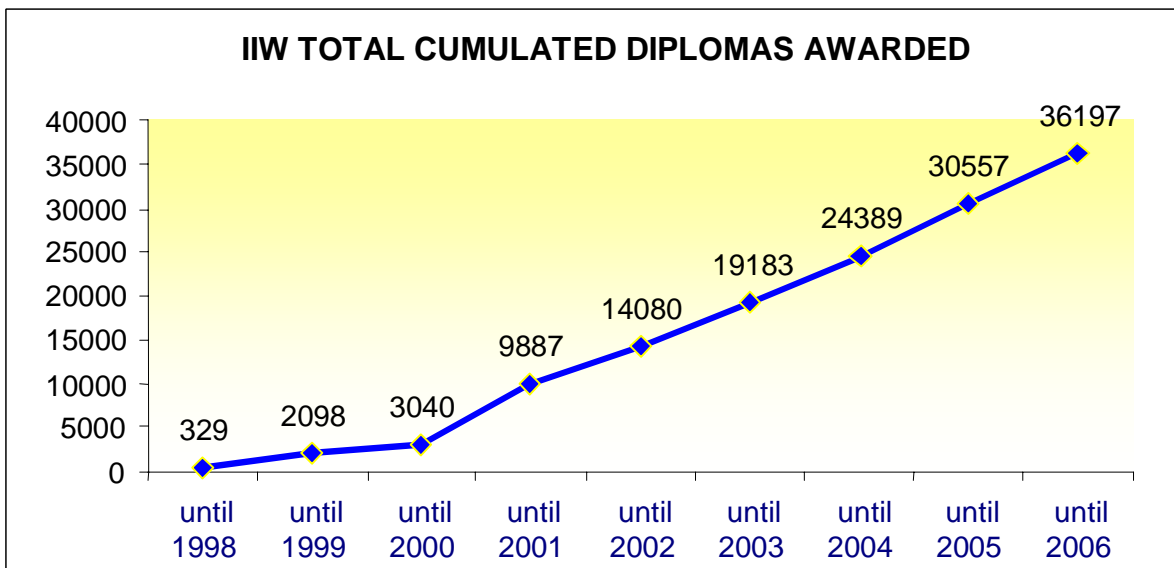


Figure 3 – IIW and EWF diplomas awarded

3. CERTIFICATION SYSTEMS

EFW has developed a Certification System for Welding Personnel for the levels of Engineer, Technologist, Inspector and Practitioner that has been implemented in 1998.

This Certification System follows the procedure summarised in figure 4.

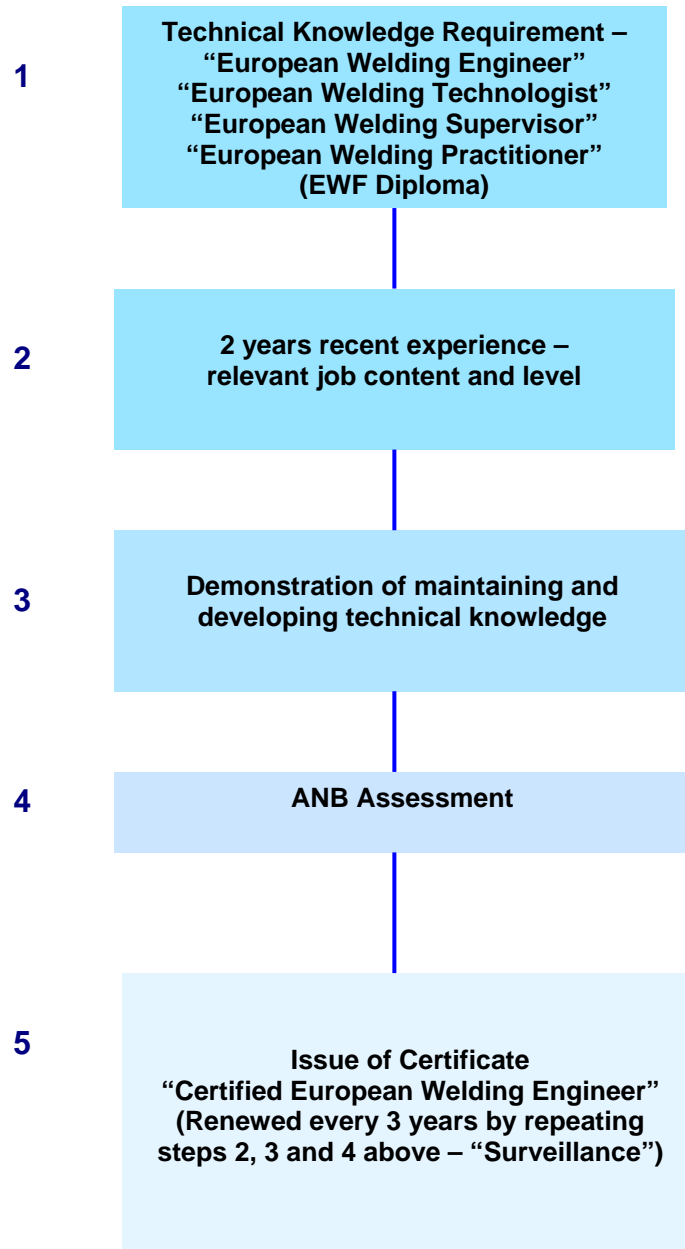


Figure 4 – Steps to Certification

This Certification System is now being transferred to IIW and its implementation is expected to start in 2008.



In 2005 the EWF Certification of European Plastic Welder started its implementation and 129 certificates were awarded. In 2006 the number of certificates awarded increased to 884.

These Systems are managed at national level by the ANB – Authorized National Body. This comprises the implementation of a quality assurance system by the organisation, based on the EWF rules document – EWF 416 and the respective audit conducted by the lead and peer assessors of EWF.

4. CERTIFICATION OF COMPANIES

The European Federation for Welding, Joining and Cutting (EWF), has developed a high integrity and specialised certification system to guarantee Manufacturer compliance with ISO 3834. Great care has been taken to detail the interpretation of ISO 3834 in terms of third party assessment, to specify and register properly trained scheme assessors and devise an operational structure so that certification of Manufacturers will be consistent whenever the scheme rules are applied.

Fabrication by welding is a complex process that cannot be limited to the welding part alone. Therefore, a range of activities needs to be considered and dealt with.

Environmental Management is now a key issue for manufacturing companies. The International Standard EN ISO 14001 (“Environmental Management System – Specification with Guidance for Use”) is the key document in this area and systems that comply with this can be integrated with ISO 9001 QMSs.

EWF has recognised this and has developed special guidelines on Environmental Management “best practices” for companies that use welding as a manufacturing process.

As well in 2006 the set of documents regarding the EWF Companies Certification System for the Health and Safety Management Scheme were approved. Implementation has just started with the authorisation of one ANBCC.

The uniform application of the EWF ISO 3834 Certification Scheme is guaranteed by appointing one organisation in each country to act for EWF. These organisations, assessed and monitored against specific rules (Doc. EWF 483-1) are known as the EWF Authorised National Bodies for Company Certification (ANBCCs) and are responsible for ensuring that the standards of assessment and certification are maintained. In this, the objective is that EWF certified Manufacturers would have demonstrated that they have achieved and identified minimum level of capability over a specified scope of activity, irrespective of the country in which they had been qualified.

In Europe there are 14 ANBCCs implementing the EWF Companies Certification System and approximately 400 companies are certified according to this EWF System. Two countries outside Europe have applied for Applicant ANBCC.

5. PROJECTS

EWF has been involved in EU projects since 2000. Starting with WELD-ON and WELDICTION projects submitted under Leonardo da Vinci programme EWF started experiencing the participation within European consortiums, to which EWF member were “pushed-in”, In seven years of participation EWF Secretariat has been involved in the development and submission of a large number of project proposals focusing topics such as training, qualification and certification of



competences and Research and Technological development on welding processes and manufacturing processing.

In concrete, EWF has been involved in the development of 13 EU approved projects. Within these, 12 different EWF members have been also cooperating with EWF, many more than once.

The projects related topics go from training/qualification of welding personnel (EUROWELD) to the improvement of welding working conditions in what concerns health and safety (ECONWELD). Also, the use of ICT (Information and Communication Technologies) in training (VIRCOUNS, GLOBALMAT), the support given to SMEs in compiling with new EU directives (LEADOUT) and the technological research on new processes and/or applications (SIM-TWB) have also been focusing EWF attention.

Therefore, the participation in EU project is related with 2 main interests: Firstly, the interest in creating awareness about EWF qualification/certification systems; secondly, in improving and promoting it to other welding communities. EUROWELD and HAMSTER are examples of projects on which the System has been improved and promoted at a wider European Level. Also, by using EU funding focussed to support Research and Technological development (e.g. FP6 and FP7), EWF has been increasing its participation in RTD projects aiming at supporting its members' research and innovation. ECONWELD, focusing welding related concerns on health and safety, is a perfect example of EWF efforts in spreading out health and safety developed knowledge among its members.

According to these figures and interests, EWF Secretariat will continue its activity within EU projects. Beyond increasing EWF visibility among potential interested communities, it promotes EWF members capability in training, research and innovation.

6. CONCLUSIONS

The European Harmonised Training and Qualification System was pioneering idea in Europe. Nowadays many other Professional Associations are following this example, harmonising their training and qualifications in Europe.

The experience of EWF in Harmonisation of Certification of Personnel and Companies indicates that it is of high importance to link the harmonised European Certification with the National Certification Systems. For countries joining the system, it is recommended to foster the collaboration with the National Certification Authorities.

EWF and its network of more than 6.000 companies and 50.000 persons has a high reputation in Europe and worldwide.

EWF will keep on with the developments in future areas of vital importance such as: Continuous development of new Guidelines and Special Courses, Establishing the Harmonised Examination Questions and Answers Database for Engineers, Technologists and Specialists, Identification of Collaboration Projects and Promotion of Certification Systems Worldwide.

EWF will keep on working supporting its members to successfully implement the EWF systems worldwide. The potential of EWF, together with the European/International Welding Institutes/ANBs network, to further develop and disseminate its expertise in Welding Technology and in harmonisation of qualification and certification, opens up further areas of activity and the way towards strengthening the recognized European/International network now in place.