



# INTERNATIONAL COMPANIES CERTIFICATION SYSTEM IN WELDING



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## ABSTRACT

Manufacturing Companies are increasingly searching for certification to comply with the three main systems, Quality, Environment and Health & Safety, as a whole.

Welding technology is involved in a major part of metal constructions many of which require tight technical specifications and quality control. The risks associated with a default in operation of a welded construction can be very severe as shown by examples from the past, which led to the loss of human lives and high material damages.

Nowadays it is not only the quality of the product that is wanted, by the costumers and society. Companies at the present are also considered as having a very important role on the sustained development. One of the ways, companies can demonstrate their commitment to the society, is through the implementation of proper systems to minimize pollution problems and to keep as high as possible the well-being of their workers and staff during the activities that must be performed for manufacturing their products.

Now it is very common to companies to implement top quality systems which include environment and health & safety systems.

EFW – European Welding Federation has created in the end of the 90' a scheme to support companies on the implementation of EN 729, which is now being adjusted to fulfil the requirements of EN ISO 3834. But due to the Companies demand, the EWF has decided to develop and implement two more schemes, each one regarding the two major areas, the environment and health & safety. The Environment Scheme and the Health & Safety are in place since the year 2006.

This paper addresses the main aspects referred on the IIW Companies Certification System that was developed using the EWF Integrated Manufacturer Certification System.

IIW - Thesaurus keywords: Company; Certification; Personnel; Recommendations; Rules.



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## 1. INTRODUCTION

The need to assure quality of welded constructions has been the basis for the development of a large number of standards in this area, firstly addressing the weld process and joint characteristics and more recently covering the overall activity related with welding technology, in a company, leading to the creation of quality systems.

Welding is a special process because the final result “the Weldment” may not be capable of being fully verified only by testing. The quality of the weldment shall be “incorporated” into the product, not by inspection. This means that normally to achieve a proper and sound weldment it is required to have a continuous control and it is needed to follow specific procedures during the production process.

One way for a company to show that the welding production or the products meet the proper quality requirements is the implementation of EN ISO 3834. This standard is mentioned in the most important EN standard related to products aiming the welding products quality assurance. The CEN product standards [1] refers that the compliance with ISO 3834 is required.

In 1994 the CEN - European Standards Committee published the first version of the standard EN 729 aimed at the definition of quality requirements for welding of metallic materials. Certification of companies using welding, based in EN 729, has been in use since then on a voluntary basis.

In 1994 ISO (International Standards Organisation) has also published the equivalent EN 729 with the identification ISO 3834. Lately ISO and CEN have been reviewing the EN 729/ISO 3834. This review process ended and the new ISO 3834 has been published in 2005. The implementation of this standard will become “mandatory” in the near future as it is mentioned in several CEN product standards.

The ISO 3834, is not a quality system standard but it can be used as a very useful tool for fulfilling ISO 9001:2008 requirements for special processes, when this standard is applied by the manufactures. It can also be used by the manufactures on itself as a way to demonstrate to a third party that the manufacturing of welding products is done according to a certain quality requirement level.

Whenever a manufacturer refers to compliance with a certain ISO 3834 quality level, it should be sufficient to demonstrate the manufacturer’s capabilities to control welding activities for the type of product/work that is being produced by the company.

The preparation of a production unit to fulfil the requirements of these standards can be time consuming and complicated. In this context IIW has prepared a set of guidelines aimed at supporting companies in the implementation of the requirements indicated in these standards.



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## 2. The IIW Companies Certification System

European Federation for Welding, Joining and Cutting (EWF), by virtue of its unique international expertise in the welding field has developed a specific Certification Scheme to guarantee companies compliance with ISO 3834.

This work started in 1995 and in 1997 the EWF Companies Certification Scheme was approved. At the same time EWF developed collaboration with the European Co-operation for Accreditation (EA). This had the aim to support EA on the elaboration of Guidelines on the use EN 45011 and EN 45012 for Certification to EN 729. This document was proposed by “EWF Drafting Group” and was approved and published by EA in May 2000 as the doc. EA-6/02.

In 2007 was agreed between EWF and IIW to transfer the EWF Companies Certification Scheme to IIW.

In 2008 IIW has approved the Companies Certification System.

In order to administer the certification systems the IIW has established the IAB – International Authorisation Board. This organisation aimed at the effective implementation of the system in all IIW countries, publish Guidelines and operating procedures to support companies.

The Authorised National Body for Companies Certification (ANBCC), is the National entity that performs the supervision of the companies certification system in each country. This organisation is appointed by the IIW and audited regularly according with a set of procedures defined by IAB – International Authorisation Board and accepted by most National Accreditation Bodies.

The Representatives from these ANBCCs form the operational management within the IAB, nominate and approve Lead Assessors and Peer Assessors who ensure conformity of each ANBCC to agreed Rules.

An ANBCC accepts responsibility in its own country for the implementation of the IIW/IAB requirements, for the maintenance of the agreed standards, and for promoting IIW certifications in accordance with the provisions of the document IAB-339-08 Rules for ANBCCs Operating the IIW Manufacturer Certification Scheme.

For the System implementation, one organisation in each country is approved by IIW or EWF, after assessment against the IIW/EWF Rules (Only the European Countries must fulfil IIW and EWF rules, other countries only fulfil the IIW rules). These organisations are known as the “ANBCCs – Authorised National Bodies for Company Certification” and are responsible for ensuring the IIW/EWF guidelines of assessment and certification are maintained. In this, the objective is the IIW/EWF Certified Companies will have demonstrated they have achieved a minimum level of capability for a specified scope of activity, irrespective of the country in which they have been certified.



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The role of the ANBCC is to act on behalf of IIW or EWF in respect of company certification, including the conduct of company assessments (either directly or through Participating Assessment Bodies), the qualification of ANBCC Assessors and the certification of companies and the recording of relevant information.

A company audited and approved within this system is awarded a certificate that states the compliance with the IIW/EWF ISO 3834 Certification Scheme and/or also including the EWF Environment Management (EMS) and/or Health & Safety Management System (SMS) if applicable. The Certificate shows the scope with respect to type of products, product standards, parent material groups, welding and welding allied processes, deviations and authorised welding co-ordinators.

A database with the relevant information of all companies certified by IIW or EWF ANBCCs is kept continuously updated and is available for consultation on the IIW/EWF Web page as mentioned above.

IIW/EWF maintains this register of IIW/EWF Certified Companies and the information contained in the registers is made freely available to enquirer's worldwide. This provides an important sales benefit to the IIW/EWF Certified Companies.

The present IIW/EWF Manufacturer Certification Scheme according to ISO 3834, documental structure is the following:

- EWF-636-07 – January 2007  
- Management Schemes Interpretation and Implementation (on this document are stated the requirements for the ISO 3834, EMS and SMS)
- IAB-337-08 – January 2008  
- Interpretation and Implementation of ISO 3834 requirements
- EWF-637-07 – January 2007  
- Supplement for the Implementation of EN ISO 3834 Oriented to Welded Products
- IAB-338-08 – January 2008  
- Supplement for the implementation of ISO 3834 Oriented to Welded products
- EWF-638-07 – January 2007  
- Rules for ANBCCs Operating the EWF Manufacturer Certification System (on this document are stated the requirements for the ISO 3834, EMS and SMS)
- IAB-339-08 – January 2008  
- Rules for ANBCCS operating the IIW Manufacturer Certification Scheme (on this document it is stated the requirements only for the ISO 3834)
- EWF-639-07 – January 2007  
- ANBCCs Assessment of Manufacturers of Welded Products Operating the EWF Manufacturer Certification System (on this document are stated the requirements for the ISO 3834, EMS and SMS)



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- IAB-340-08 – January 2008
  - ANBCCs Assessment of Manufacturers of Welded Products Operating the IIW Manufacturer Certification Scheme (on this document it is stated the requirements only for the ISO 3834)

Table 1 summarises the content of the abovementioned documents.

Interpretation for Manufacturers	Assessment of Manufacturers	Assessors	Questionnaires
<p>Doc. EWF-636 / IAB-337 explains the interpretation for each part of ISO 3834 on important items:</p> <ul style="list-style-type: none"> <li>- Contract and design review</li> <li>- Subcontracting</li> <li>- Welding personnel</li> <li>- Inspection, testing and examination personnel</li> <li>- Equipment</li> <li>- Storage of parent materials</li> <li>- Calibration</li> <li>- Identification and traceability</li> </ul>	<p>The Assessment procedure (Doc. EWF-639 / IAB-340) has three phases:</p> <ul style="list-style-type: none"> <li>- Information phase and assessment preparation</li> <li>- Assessment phase</li> <li>- Certification phase</li> </ul> <p>The assessment team must be competent in relation to the specific product welding activities.</p>	<p>The procedure for the evaluation and registration of assessors describes that the assessors must be either:</p> <p>qualified and experienced in quality system auditing and experienced in welded fabrication.</p> <p>or</p> <p>I/EWE or I/EWT with at least three years of work experience in the field of welded fabrication and familiarity with quality management systems.</p> <p>After approval assessors are registered in the Register of Assessors, according to their quality and engineering profiles and according to the products they are experienced on.</p>	<p>The questionnaires (Doc. EWF-639/ IAB-340):</p> <p>are used as check list of all important items of the standard and the EWF/IIW interpretation in an interrogative form, which will be used during the assessment.</p>

Table 1 — Summary the contents of IIW/EFW ISO 3834 Scheme documents only

### 3. The EWF Integrated Manufacturers Certification Scheme

Due to the developments and needs from the manufacturers regarding the compliance with other Systems, EWF Integrated Manufacturer Certification System has at the present also the possibility to Certify Companies according to the EWF Environment Management Scheme (EMS). The EMS was developed with the aim to Certify Manufacturers of Welding Products in compliance with EN ISO 14001. The last pillar of the EWF Manufacturers Certification Scheme was the approval and implementation of the Health & Safety Management System (SMS). This system was approved in 2006.



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In terms of the EWF Integrated Manufacturer Certification Scheme, it has been decided by EWF that a company to be certified according to requirements of EWF-EMS or EWF-SMS it needs to be first certified according to the IIW/EWF certification requirements regarding ISO 3834, only then it is possible for the company to apply for the certification on Environment and Health & Safety.

The EWF Integrated Manufacturer Certification System is the unique System that can answer to a fully integrated manufacturers system on the metalworking field. At the same time the Technical Committee of EWF is developing specific supplements for application to specific products, such as, railways vehicles and components, pressure equipment, welded structures and so on, all of this supplements are namely to be applied for fulfilling the EN ISO 3834 requirements and specific EN product standards.

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The EWF view is a holistic model - EWF Integrated Manufacturer Certification Scheme encompassing quality, environment and health & safety as presented in Table 2.

<b>Certification Schemes</b>	<b>Main Rules/Requirements</b>	<b>Specific Rules/Requirements</b>
Quality	Scheme for Compliance with ISO 3834	Guidance for compliance with specific EN Products Standards, i.e. Railways, Piping, Structures
Environment	Scheme for Compliance with EN ISO 14001	Not Applicable
Health & Safety	Scheme for Compliance with Health & Safety	Not Applicable

Table 2 — EWF Integrated Manufacturer Certification Scheme – Holistic View

### 4. RESULTS OBTAINED

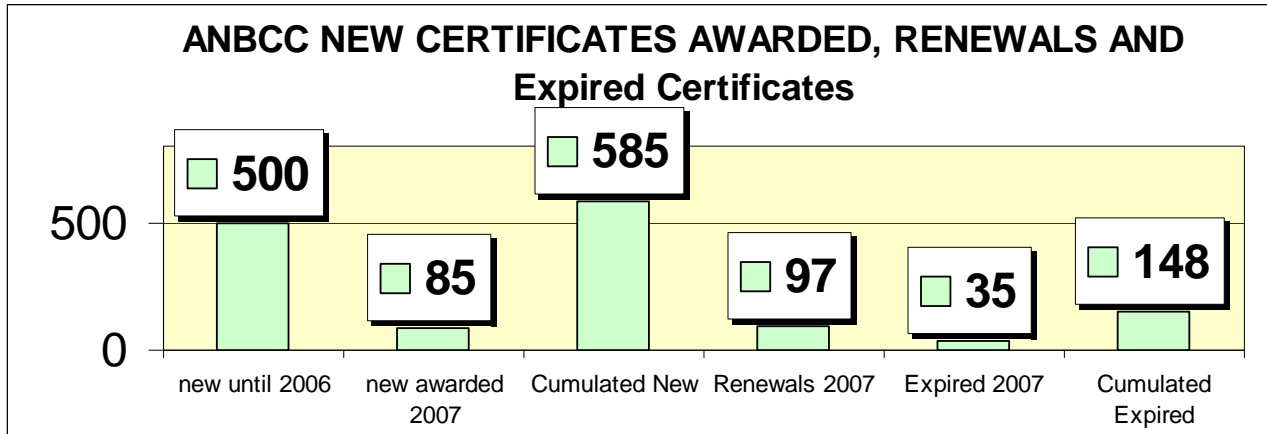
From January 2008, 18 countries have been approved by EWF and IIW to implement ANBCCs, they are: Australia, Austria, Croatia, Czech Republic, France, Germany, Hungary, Netherlands, Italy, Iran, Poland, Romania, Slovakia, Slovenia, South Africa, Spain, Ukraine and United Kingdom.

At the present is not possible to present the amount of Companies that have been certified under the IIW system, the figures regarding the year 2008 will be gather during first semester of 2009.

For the EWF Manufacturer Certification Scheme according to ISO 3834, till the end of 2006 approximately 500 companies have been awarded with the EWF certificate (see Table 3).



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**Table 3 — EWF ANBCCs ISO 3834 Certification Activities**

## 5. CONCLUSION

The International System for Companies Certification is recognised worldwide, and objectively supported by industry and by international organisations related with welding technology, opening the way towards one Global Certification System in the field of Welding Technology.

The relevance of the International Certification System for Companies will generate worldwide a very high interest like it was when the EWF Certification Systems were implemented in Europe by EWF.

The International Certification System will not only be of benefit to the large end-users but also to the supplier companies. The benefit to the end-users is related to the purchasing process, and to the warranty that the supplier is capable in what regards the welding construction. To the supplier companies when they are certified according to the EWF/IIW Companies certification system, they demonstrate they not only comply with the ISO 3834, but they were assessed under a set of rules that are recognised by all the EW/IIW members.

In conclusion it is worth to point out the benefits for fabricating companies in getting a certificate and their reference in the database:

- 1) Clear, high profile, independent verification of compliance by the world's leading authority on welding.
- 2) Facilitates compliance with European Standards and Directives.
- 3) Confirmation of welding and fabricating capability and staff competence.



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- 4) Improved client confidence leading to a reduction in external audits.
- 5) Entry of the company's details on well-published national and European registers.
- 6) Quality and Environmental management and fabrication capability assessments carried out by specialist assessors.
- 7) Increased national and international business potential.
- 8) Certification packages to suit individual company requirements.
- 9) ISO 3834 certification can be achieved alone or alongside EN ISO 9000:2008 certification.

### Contact

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