

Whitepaper

Employment, training and qualification needs of the European industry – a perspective from the joining sector

Europe is the birthplace of the industrial revolution. Manufacturing is still a hallmark of Europe and an area of ample wealth generation and employment opportunities.

European manufacturing in an increasingly complex and competitive global market, welding and joining should be regarded as essential cross-sector technologies that are in increasing demand. The special process of welding, that is its quality cannot be determined by inspection after the joint has been made, demands special competence in those who apply it, both in special educational provisioning as well as in effective assurance of personnel competence.

European Welding Federation (EWF) during the last 30 years has integrated the activity in the field of welding of practically all the European countries. At the moment **Bulgarian Welding Society (BWS)** is one of the 31 members of EWF to successfully contribute to this mission and harvest the results. For already 13 years the created **Bulgarian Centre for Qualification in Welding (BCQW)** is offering the opportunities of the International Harmonized System for training and qualification of welding personnel. Bulgarian specialists have participated the high level courses organized in the country. More than 600 internationally recognized diplomas have been already awarded.

The presented recently by EWF **”Whitepaper”** contains information and competent analyses to move the industry in Europe forward and the role and place of the welding professionals in particular to develop and offer cross-section technologies from “ship to chip”. The **”Whitepaper”** information is structured in several sections, some paragraphs of which are extracted from the original text and briefly presented to the reader’s attention below.

The role of the training and qualification stakeholders

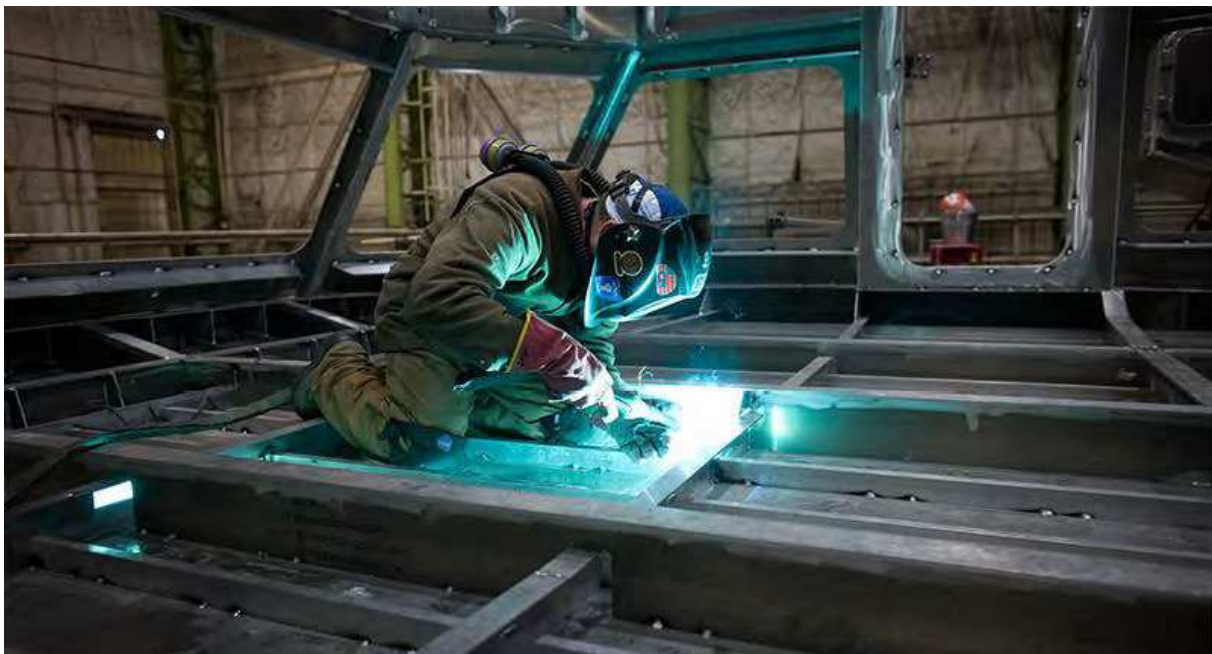
EWF, as well as other relevant players in the industry, is actively working to raise awareness amongst all of the potential professionals about the increasing opportunities that exist on the manufacturing sector. For EWF specifically, the focus has been on developing relevant initiatives, ranging from recognition through awards for young welders, best welding coordinator and Lifetime achievement to implementing innovative teaching methods, including implementation of Virtual Technology in education of welders and welding specialists as well as through the launch of the Welding Dictionary app, currently available on the Apple App Store and in the implementation of distance learning in welding / joining technologies.

Industrial challenge

Europe's industry needs to reinvent itself to regain competitiveness and leverage new growth opportunities. New players have emerged in the markets, as well as new materials and new technologies. Enabling technologies, such as joining, can play a pivotal role in its future.

To increase the competitiveness and performance of the industrial sector in Europe, a long-term strategy has been defined, one that focus on creating lasting competitive advantages for Europe's industrial sector at large. Those are the pillars of the Horizon 2020 Program. For industry alone, this means leading in enabling and industrial technologies, providing access to funding and ensures innovation on the **SMB** (Small and Medium Business) space. So, the perspectives for the manufacturing sector look promising, furthermore with initiatives such as **Manufuture**, which aims to place Europe at the forefront of the new industrial revolution, on four main areas:

- Competitiveness in manufacturing industries;
- Leadership in manufacturing technologies;
- Eco-efficient products and manufacturing;
- Leadership in products and processes, as well as in cultural, ethical and social values.



With Joining being the most important fabrication technique used in manufacturing, joining technologies represent the central challenge in modern process chains, as they are often a factor that can run up the costs, as well as have the potential to be a cost-saver.

New growth areas for joining industry and professionals

Joining technology is used for the manufacture of a variety of products in different sectors, from electronics to automobile industry. A cross-sector need is that of well qualified professionals that can ensure the quality of the end product.

Its relevance is known to be significant, and as recently as 2013 a study was conducted by the European Federation for Welding, Joining and Cutting and DVS – German Welding Society to assess it. This thorough study, based on a collection of data, statistical analysis and modelling, led to results that show that the total added value generated by European joining industry is around 66 Billion Euros per year and that just over 1.2 million people work in welding and related technologies in the EU(28). For the purposes of the study, the following figures were

identified, that are particularly relevant for the professionals on these areas. From an employment perspective, this is the current status:

- Welding currently employs 647,000 people as welders;
- 311,300 as welding coordinators, researchers, designers, trainers and robot operators;
- 165,900 in terms of joining-related personnel.

New employment opportunities in Joining Training, Qualification and Certification

Joining is a profession with increasing demand, both in terms of professionals as in terms of qualifications and certification of its professionals. Framing the education challenges in Europe, data shows that the demand for medium level qualifications will remain high in Europe, estimating that high-qualified employment will grow by about 13% between 2013 and 2020 whereas low-qualified employment will shrink by 12%. This means that by 2020, about 31% of employment in Europe will demand high qualifications and only 21% will require low qualifications.

EFW's harmonized training, qualification and certification system

EFW manages a harmonized system for training qualification and certification of joining personnel. It is also responsible for the Certification System of companies using welding in Quality, Environment, and Health and Safety, with 31 European member countries represented by their national welding societies.

An organisation, recognised by the EFW national member society, is appointed as the **Authorised National Body (ANB)** for the supervision of the system for training, qualification and certification of personnel in each country. ANBs are responsible at the national level for:

- The assessment and monitoring of Approved Training Bodies (ATBs);
- The conduct of examinations;
- The assessment of applicants for certification;
- The issue of Diplomas and Certificates

The evolution of the system to address employment challenges

The reputation of the EFW system is growing and more countries are joining the system every year. Also, EFW has been a pioneer in implementing a harmonized qualification and certification system for welding professionals. Given the importance of the mobility of labour within the worldwide community, requiring the best and most comprehensive harmonisation, both EFW and IIW have engaged on enabling this harmonization through processes such as the approval of questions by Teams of International Experts.

Conclusions

Welding is a special process that requires careful attention and control in order to avoid problems such as failures and overspends. Thus the need companies have to assure the competence of their welding personnel. This competence is achieved through proper education and training, for example by showing a EFW Qualification and by on-the-job experience.

The harmonized international EFW training, qualification and certification systems described in this paper provide manufacturing companies worldwide and their workforce with a convenient, comprehensive and convincing way of demonstrating compliance with EN ISO 3834 and EN ISO 14731, as well as the most recent EN 1090 and EN 15085, which is a mandatory requirement to obtain CE Marking.

The full text of EFW ‘‘Whitepaper’’ can be downloaded – please see:

BWS WEB page; www.bws-bg.org EFW WEB page: www.efw.be

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