



UK Section of the International Institute of Welding

Influence over
development and
operation of
internationally
recognised qualification

Shared vision for
International
education and
qualification of
welders and
welding engineers

Opportunities to
showcase your
capabilities and
technical achievements
to a knowledgeable
international audience

Access to
International
welding
information
resources

Participation in
international working
groups developing best
practice guidance and
informing standards
development

Extensive networking
opportunities to
promote international
communication,
collaboration and
cooperation in your
field of expertise



The UK Section of the IIW

IIW brings together world expertise in joining technologies across the globe. Be a part of the UK Section which brings together working units (known as commissions) in a range of different areas. More information regarding the value and benefits of each commission's activities are detailed below.

Commission I **Thermal cutting & allied processes**

International knowledge exchange and technical networking in thermal and laser cutting process technology development.

Commission II **Arc welding and filler metals**

Commission II addresses all aspects relevant to the Metallurgy, testing, standardisation and classification of weld filler metals.

Commission III **Resistance welding & allied joining processes**

Monitoring and dissemination of technical advances in resistance and friction welding. International standardisation of the friction stir welding (FSW) process.

Commission IV **Power Beam Processes**

To develop and exploit electron beam and laser welding technology through cooperative technology transfer between research organisations and industry.

Commission V **Quality control and quality assurance of welded products**

Networking and knowledge exchange in world-wide NDT technology development and influencing of international standardisation.

Commission VIII **Health & Environment**

Commission VIII deals with all health and safety aspects of welding activities and is comprised of an international group of safety, toxicology, regulatory and medical experts.

Commission X **Structural performance of welded joints-fracture avoidance**

Dissemination of information and technical advances in:- fitness-for-service assessment procedures for welded structures; effects of weld strength mismatch on structural integrity of welded components; fracture toughness testing of welds; and the prediction and effects of welding residual stress on structural behaviour.

Commission XI **Pressure vessels, boilers and pipelines**

This Commission deals with recent progress in the technical areas of pipeline welding; creep strength reduction factors for welds; hydrogen effects on pipeline steels welds; the estimation of fracture toughness from other properties; the behaviour of dissimilar welds; and cracking mechanisms of welds in high-strength pressure vessel steels.

Commission XII **Arc welding processes and production systems**

Sensor and Control, Arc Welding Processes, Production Systems and Applications, Underwater Engineering and Quality and Safety in Welding. Over 70 people normally attend the Commission meetings at the General Assembly with in excess of 20 papers and reports being discussed. Joint Workshop with other commissions are regularly held to discuss topics of mutual interest e.g. arc physics with SG 212 and arc/laser hybrid systems with Commission IV.

Commission VI **Terminology**

Works on standardisation of terminology for welding and allied processes. The terms and definitions agreed are made available through multilingual collections of terms and in standards. Working Group 1 develops the IIW thesaurus.

Commission IX **Behaviour of metals subject to welding**

Metallurgy of weldments in four distinct alloy groupings, low alloy steel, creep and heat resisting steels, non-ferrous alloys, stainless steels and nickel alloys. Meeting over 3 half days where technical papers are presented and discussed, some which go on to be published in *Welding in the World*. An excellent forum to network with experts in the field.





Commission XIII
Fatigue of welded components and structure

Provides an international forum for presentation and discussion of technical information concerning fatigue of welded structures and components. With the aim of providing industry with practical guidance on the safe and economic design of fatigue-loaded structures, various working groups are active in the production of best-practice recommendations. Recent such material on fatigue design stress analysis, statistical evaluation of fatigue data, fatigue like improvement techniques and retrofitting for life extension has been widely utilised by the Standardisation bodies.

Commission XIV
Education and Training

Improve the shortage of certified welders worldwide. Universal issues involve the qualification of instructors and students. Enhance the image of welding. Consideration of global training resources to advance the promotion of standardisation and to avoid duplication.

Commission XV
Design, analysis and fabrication of welded structures

New approaches in design and analysis of welded joints as well as development of the traditional ones. Operational and metallurgical aspects concerning the fabrication and erection of structures. Aspects of maintenance of welded structures. Economical and ecological aspects of welded connections for design, erection and maintenance.

Commission XVI
Polymer joining and adhesive technology

International knowledge exchange in welding of thermoplastics using hot plate vibration and laser processes as well as thermoplastic weld modelling and terminology of plastic welding

Commission XVII
Brazing Soldering and Diffusion Bonding

Laser and low-temperature brazing processes and new brazing fillers; repair and surface brazing applications; dissimilar materials and wide-gap brazing; diffusion bonding technologies and application.

SG 212 Study Group
The physics of welding

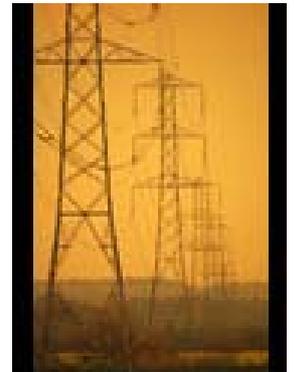
Collate, discuss and provide science-based solutions of the mechanisms of arc and fusion welding, in order to control and improve weld quality and productivity. This includes: numerical investigations of arc behaviour, process and weld characteristics; visualisations of welding; and arc process optimisation.

SC QUAL Select Committee
Quality management in welding and allied processes

The most important standards of this working unit are ISO 3834, "Quality requirements for fusion welding of metallic materials." In addition, ISO 5817, "Welding - Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) - Quality level for imperfections". Work includes: checklist for ISO 3834-2 audit ; recommendation for the determination of appropriate Quality Levels according to EN ISO 5817

SC STAND Select Committee
Standardisation

Administration of the IIW standardisation programme and liaison with the International Standardisation Organisation, ISO.



SC AIR Select Committee
Permanent joints in new materials and coatings for aircraft engineering

This Select Committee's current focus is on welding repair of aircraft engine materials.

International Authorisation Board (IAB)

Group A - Education, Training and Qualification
Group B - Implementation and Authorisation

SC SHIP Select Committee
Shipbuilding

Establish international forum for technology transfer and information exchange for worldwide shipbuilding industry. In particular: innovative shipbuilding production systems; key aspects of shipyard organisation; modern shipbuilding welding trends; health and safety aspects; work environment conditions including "welding fumes"; and human factors.



SC AUTO Select Committee
Automotive and Road Transport

Exchange of research activities in the automotive industry including:- friction stir spot welding; resistance spot welding; welding simulation; active thermography and joint properties of ultra high-strength steels.

SG RES Study Group
Welding research strategy and collaboration

International information exchange on trends in welding research and funding sources including identification of potential collaborators.

IIW FAQ's

1. What is IIW?

Although it is called the International Institute of Welding, it is not really an institute! Created around 1950 to provide a forum for experts in welding to share their ideas and information, it rapidly became an indispensable organisation for all welding professionals worldwide seeking to learn from each other.

Although there is a full time secretariat based in Paris, the governance and leadership is all provided through voluntary effort from the welding experts involved. This ensures that the strategy and objectives remain in line with the needs of the welding community it serves.

2. What is in it for me?

If you are involved in manufacturing by welding, engaging with IIW will enable you to exchange information and ideas with welding experts from around the world. IIW is a community that contains experts on every facet of welding, joining and related technologies, and through this community you will get ideas and information on how to optimise your manufacturing processes.

If you are involved in operating welding plant, engaging with IIW will give you access to information and ideas covering structural integrity, repair, refurbishment etc. covering all types of material and plant.

If you are involved in research, you will be able to engage with high level industrial and academic researchers on virtually any topic by selecting those IIW commissions that are within your field of interest.

If you are involved in education and training, there is an IIW commission (XIV) which is dedicated to exchanging ideas and experiences in the field of education, training and qualification, in all aspects of welding and related technologies.

Whatever your role and whatever your interest, it can be guaranteed that there will be something in IIW that will benefit you.

3. How much?

Industrial and Professional members of TWI and members of The Welding & Joining Society are entitled to access IIW reports and documentation free of charge through TWI's library. For members there is also no charge to be attached to any of the commissions. In order to fully exploit the benefits, it would normally be recommended to attend meetings of those commissions that are relevant to your interests. These meetings can be held anywhere in the world and you would need to cover your own travel costs.

The main meetings of the commissions are held at the Annual Assembly which is held in a different country each year and, as well as covering your travel and hotel costs, you would need to pay the enrolment fee for this event which is currently in the region of several hundred pounds.

4. Where can I find more information?

For information about IIW publications and documentation, contact TWI library (library@twi.co.uk). For information about how to get attached to any of the commissions, contact the UK IIW delegation secretary (rachel.wall@twi.co.uk). The secretary may also be contacted about assemblies and other IIW meetings.

5. What can IIW do for me?

Expand your horizons! There is always a danger in being too insular in our professional lives and this can be easily remedied by engagement with the IIW community of experts throughout the world. Through this engagement you will benefit personally from the professional point of view and it will also enable you to bring benefits to your employer and clients.

6. How can I exploit IIW products?

IIW products mainly consist of the publications, information and documents and, through TWI's library, these are searchable so that you can home in on information you need to solve any particular question or problem.

Apart from this, you can benefit from face to face meetings with kindred experts both formally and informally by attending relevant meetings and the annual assembly.

7. How do I become more involved?

The best way to get involved is to examine the list of commissions, committees and study groups, identify those that are of interest to you and then contact the secretary about how best to engage with your selected fora.

Committee

The UK section of IIW is administered by a committee. The Committee Members are drawn from among 30 or so UK delegates and experts, most of whom are actively engaged in the activities of the IIW working units, attending the Annual Assembly and participating in interim meetings and briefing groups.

Committee Members:

- Norman Cooper, BAE Systems - Chairman
- Christoph S Wiesner, TWI
- David Howarth, Lloyd's Register
- Chris Eady, TWI
- David S Smith, Downham Technology Ltd
- Jim Fieret, Linde Gases
- David Millar, NST Welding Ltd
- Steven A Jones, Rolls-Royce plc
- John A Marlow, John Marlow Ltd
- Zhuyao Zhang, Metrode Products Ltd
- Bill Mosley, Network Rail
- Sarah Meagher, BSI
- Rachel Wall, TWI - Secretary



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www.twi.co.uk/content/iiwuk.html