



**WATER JETTING ASSOCIATION**



**The Water Jetting Association (WJA) is a trade association representing contractors, manufacturers, hirers and other organisations that have a professional and commercial interest in all aspects of high-pressure water jetting.**



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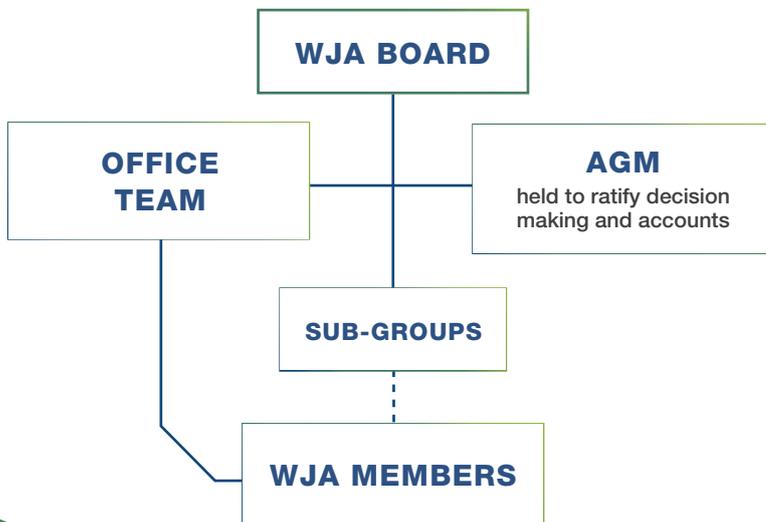
# INTRODUCING THE WATER JETTING ASSOCIATION

The Water Jetting Association (WJA) is the UK-based trade association for businesses, agencies and individuals involved in the water jetting industry.

## OUR MEMBERS INCLUDE:

- Water jetting contractors
- Equipment manufacturers
- Equipment sellers and maintainers
- Hire companies
- Training providers
- Organisations that use water jetting as part of their in-house business process
- International members

## WJA STRUCTURE



Our primary aim is to promote the highest possible safety and technical standards for all forms of water jetting, including ultra-high-pressure water jetting, high pressure water jetting, pressure washing, and drain and sewer cleaning.

The WJA is the UK's largest provider of water jetting training. We have developed internationally recognised Codes of Practice for water jetting which we seek to continuously update and improve. We are also committed to furthering our members' interests via commercial opportunities, regulatory representation, technical advice and brand association.

## STRONG GOVERNANCE

The WJA's success is based upon a robust structure and strong governance. This ensures the association's work is carried out professionally to a high standard and that it is financially well managed.

Day-to-day operational matters are managed by a small operational team led by the WJA Director.

All key decisions are made by the WJA Board, advised by sub-groups. See *WJA Organisational Structure*.

## WJA Audited Member Programme

The WJA audits water jetting contractor members (C1), drain and sewer cleaning contractor members (C2) and hirer members (C3) every three years against criteria informed by WJA codes of practice. Members who pass the audit can promote this achievement with a special logo.



The WJA was established in 1980 to represent members in the UK. We also welcome international members and seek to work with like-minded organisations across the world.

# WATER JETTING EXPLAINED

Water jetting is an industrial process using water delivered under pressure to clean, defoul or prepare surfaces. It is also used to cut materials and, through a process known as hydrodemolition, to remove material from an object. Abrasives can also be added to water jets to enhance cutting power.

Water jetting has become essential across many industries, including oil and petrochemicals, maritime, construction, water utilities and manufacturing.

Over the last 50 years, technology and expertise have advanced rapidly, allowing water jetting pressures to increase. This has expanded the range water jetting applications. It has also presented new challenges, not least in terms of health and safety.

## WATER JETTING OPERATING PRESSURES\*

### Low pressure cleaning

Up to 207 bar (3,000 psi)

Also known as power washing or pressure washing.

### High pressure water cleaning

Above 207 bar up to 608 bar (10,000 psi)

Also known as high pressure washing.

### High pressure water jetting

Above 608 bar up to 1,700 bar (25,000 psi)

Also known as high pressure water blasting.

### Ultra high pressure water jetting

Above 1,700 bar (25,000 psi).

Pressures now exceed 2,700 bar (40,000 psi), with water jets travelling at supersonic speeds.

\*In accordance with NACE standards



Image Courtesy of  
Flowplant Group Ltd

## WATER JETTING – KEY USES

- ✓ Surface cleaning
- ✓ Surface preparation
- ✓ Ship hull defouling
- ✓ Industrial tube cleaning
- ✓ Concrete cutting and demolition
- ✓ Drain, sewer and tank cleaning

## WATER JETTING – KEY BENEFITS

- ✓ Reduced vibration injury risk
- ✓ No dust pollution
- ✓ Reduced chemical use
- ✓ Reduced risk of structural damage
- ✓ Intrinsically safe
- ✓ Precision solution
- ✓ Deliverable in confined or remote space

# PIONEERS FOR SAFE AND PRODUCTIVE WATER JETTING

The UK's high pressure water jetting industry is built on the efforts of a small band of pioneers, some of whom went on to play a key role in the creation of the WJA.

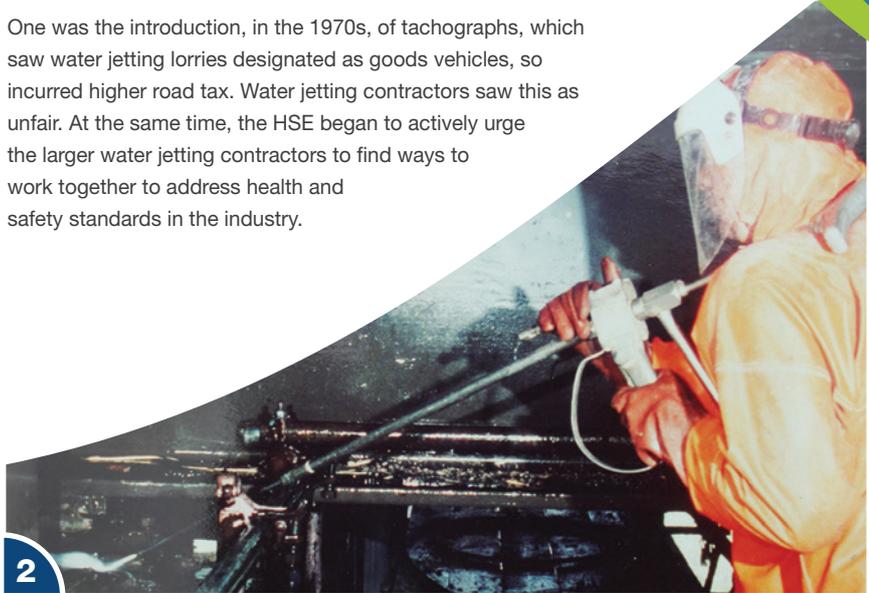
The growth of the petrochemical industry in the UK after World War Two fuelled demand for effective and intrinsically safe methods for cleaning pipes, production vessels and storage tanks.

Water jetting contractors sought to protect technical know-how and business advantages, limiting scope for cooperation. There was little by way of specific regulation and control.

This situation gradually changed during 1970s. Agencies like the UK's Health and Safety Executive (HSE) began to take an interest in safety issues related to water jetting.

Contractors began to see the benefits that would flow from cooperating to raise industry standards and working together on commercial issues of shared interest.

One was the introduction, in the 1970s, of tachographs, which saw water jetting lorries designated as goods vehicles, so incurred higher road tax. Water jetting contractors saw this as unfair. At the same time, the HSE began to actively urge the larger water jetting contractors to find ways to work together to address health and safety standards in the industry.



THE ASSOCIATION  
 INAUGURATION DATE: 9TH OCTOBER, 1980  
 NUMBER OF MEMBERS NOW: 21  
 OFFICE BEARERS OF ASSOCIATION: PRESIDENT - MR. M.J. DONALDSON  
 VICE-PRESIDENT - MR. J.F. WOODFORD

PERMANENT SENIOR OFFICIALS  
 DIRECTOR: MR. A.M. LITTLEJOHN, B.SC., B.LITT.  
 SECRETARY: MR. M. ANTHONY, C.ENG., F.R.I.N.A., M.I. MECH.E.  
 ACCOUNTANT: MR. J.H. WINSTANLEY.

ADDRESS  
 ASSOCIATION OF HIGH PRESSURE WATER JETTING CONTRACTORS,  
 33, CATHERINE PLACE,  
 LONDON,  
 SW1E 6DY.  
 TEL: 01-828-0933

AIMS OF THE ASSOCIATION  
 TO REPRESENT AND PROMOTE THE INTERESTS OF THE HIGH PRESSURE WATER JETTING CONTRACTORS;  
 TO PROVIDE FACILITIES FOR THE DISCUSSION OF PROBLEMS;  
 TO PROVIDE MEANS OF CO-OPERATION WITH OTHER ORGANISATIONS;  
 TO ADVISE AND ASSIST MEMBERS WHERE DESIRABLE;  
 TO PROMOTE, SUPPORT, OPPOSE OR INFLUENCE LEGISLATION;  
 TO ENCOURAGE HIGH PRESSURE WATER JETTING CONTRACTORS TO USE A CODE OF SAFE PRACTICE;  
 TO PROMOTE PROFESSIONALISM IN THE FIELD OF HIGH PRESSURE WATER JETTING; AND  
 TO PROVIDE EMPLOYMENT OF MEMBERS FOR HIGH PRESSURE WATER JETTING.

## Pathway to water jetting excellence

1. A document formally recording the inauguration of the Association of High Pressure Water Jetting Contractors (AHPWJC) at a meeting held on 9th October 1980
2. An early example of hydrodemolition maintenance to release viaduct bearings on the M6 through Birmingham
3. A high-pressure water jetting pump being fitted to a lorry chassis
4. Whitley Bay teenager won a competition to design the AHPWJC's first logo
5. The logo was changed when the association changed its name to the WJA
6. In 2020, the WJA created a special logo to mark its 40th anniversary
7. Hydrodemolition remains vital for highway maintenance – this example on the M5 Oldbury viaduct in 2019
8. In 2023, the WJA allowed non-UK training providers and instructors to apply to deliver WJA training
9. Water jetting into the future – robotic technologies can make water jetting safer and more productive



1980 – 2020

6

## BIRTH OF THE WJA

**The two issues described above – road tax and safety – were helped drive a move towards setting up a trade body.**

A series of meetings were held, under the aegis of the British Hydraulics Research Association and – in October 1980 – to the foundation of the Association of High Pressure Water Jetting Contractors, the forerunner of the WJA.

The first water jetting training courses were held in 1981 at the BHRA's laboratory at Cranfield University. The first Code of Practice was published in 1982 as an A5 document.

Since then, the code, now the A4 Blue Code has been amended and revised multiple times and has been joined by two other codes of practice: the Red Code for drain and sewer cleaning, and the Purple Code for pressure washers – see page 12

This reflects the WJA's determination to keep up with rapidly improving water jetting technology – and its continued success in bringing together all parties in the industry.

This determination is increasingly recognised globally. Members of the WJA – water jetting contractors and training providers – deliver their services around the world.

The WJA's Codes of Practice are seen as setting standards to aspire to. Because they have been created by an association led by the people who know the water jetting industry. The people who work in it.

# TRAINING FOR SAFETY AND BUSINESS SUCCESS



Training is central to the WJA's goal of supporting high quality and safe water jetting. Many thousands of operatives in the UK and around the world attend our courses every year.

Our training is underpinned by our Codes of Practice. Courses are accredited by City & Guilds and, for our Level 2 Certificate, by ABBE. Every course also includes a process of formal candidate assessment

All our courses are delivered by WJA-registered examination providers and WJA-approved coach/examiners. They are selected for their experience and expertise in water jetting and are regularly audited to ensure our training standards are maintained at a high level. The WJA also closely monitors delegate feedback, gathered at every training event.

Our courses are regularly reviewed and updated to ensure closely aligned with current practices and technology, latest health and safety regulations and new research.

## WJA TRAINING – HOW IT WORKS

Our training is designed to give water jetting operatives a firm foundation for delivering safe service to a recognised and uniform standard and to support them in maintaining that standard throughout their careers.

The WJA operates a two-stage training process involving both theoretical and practical learning. This way, delegates learn the key principles of water jetting and get valuable hands-on experience under guidance from an experienced WJA coach/examiner.

First, delegates must pass our Safety Awareness course. This is a one-day class-based course that introduces delegates to the main concepts and issues relating to high pressure water jetting. They must then attend and pass at least one of our practical water jetting modules.



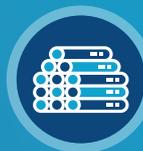
Safety Awareness

### Class-based

#### Practical modules



Surface Preparation (SP)



Tube and Pipe Cleaning (TP)



Drain and Sewer (DS)



Drain, Sewer and Surface Preparation (DSP)



Hydrodemolition (HD)

## WJA WATER JETTING CARD

All delegates who attend the WJA's Safety Awareness course and Practical Modules are assessed to ensure key learning objectives are achieved (see Click to Assess – page 10).

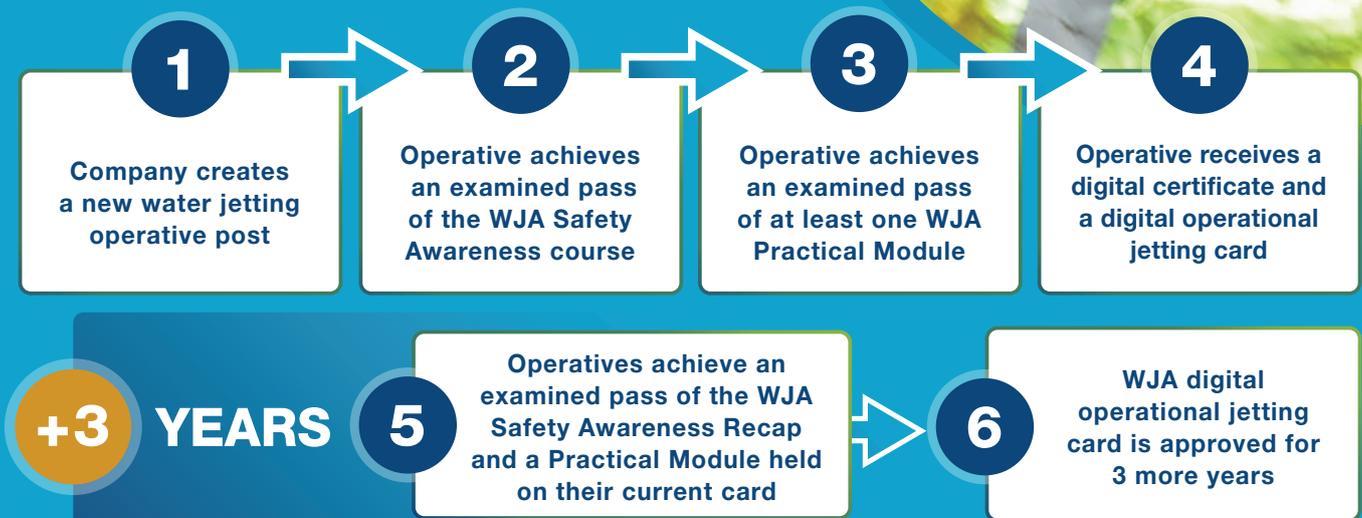
Those who achieve the 75 per cent pass mark in both courses are awarded a digital WJA operational jetting card. Their details are also added to the WJA database of water jetting operatives.

To retain their WJA training cards and registration, operatives must pass the Safety Awareness Refresher course, which includes a practical assessment, every three years. Practical Modules only have to be passed once. (see infographic).

Contractors and service users can scan a QR code on training cards and certificates to instantly check the training status of operatives.



## WJA TRAINING COURSE PROCESS



### EXTRA OPTION - Level 2 Water Jetting Technician Certificate



**Step 1:** Complete at least 2 practical modules, including Surface Preparation

**Step 2:** Complete at least 122 hours of guided workplace assessment, supervised by a WJA assessor

**Outcome:** The WJA recognises successful candidates as competent water jetting operatives, who must then complete a Competent Safety Awareness refresher course every three years.

#### URGENT ADVICE FOR FIRST AIDERS AND MEDICAL PROFESSIONALS



### DIGITAL JETTING CARD ON WJA APP

Operatives who pass the WJA Safety Awareness course and at least one practical module receive digital certificates and digital operational jetting cards. Current course details can now be verified via the WJA app, or via a QR code on hard-copy jetting cards, issued on request.

WJA operational jetting card – QR codes provide access to course details and the WJA water jetting injury treatment algorithm

## SAFETY AWARENESS

### Course includes:

- **Applications and machines:** machine types, pressure and flow rates, configurations, categories.
- **Legislation and WJA codes of practice:** regulations, responsibilities, enforcement powers, risk assessment.
- **PPE:** effectiveness and limits, types of protection.
- **Jetting equipment:** nozzles, pumps, pressure controls, water jetting hoses.
- **Water jetting hazards and injuries:** water jet, operational regime, site environment and first aid.
- **Operational procedures:** site preparations, use of different equipment, non-standard equipment.



## SAFETY AWARENESS CNC

The course is based on the WJA's Safety Awareness course to give CNC machine operators an effective introduction to water jetting applications and safety.

As part of the training process, the WJA approved instructor carries out a site visit to assess the equipment being used by course delegates.

## PRACTICAL MODULES

### Course includes:

- **Jetting equipment:** nozzles, jetting hoses, machines, controls, capabilities, damage and wear characteristics.
- **Assessment and planning:** risk assessment, SSoW, equipment selection, water provision, waste disposal.
- **Operational procedures:** setting up, daily checks, permits, job completion.
- **Practical exercise:** equipment set up, hazards and use of PPE, site preparation, team talk, signalling, personal instruction.



## PRESSURE WASHING

The WJA pressure washing course is for people who are involved in the operation of pressure washing cleaning equipment.

It includes class-based instruction and practical assessment.

Successful delegates receive a WJA pressure washing card which must be renewed every three years by reattending the course.

### Course includes:

- Introduction to surface preparation
- Pressure washer pumps
- Types of nozzles
- Health and safety
- PPE and safety devices
- Safe use of heat and chemicals

Operatives then attend the Pressure Washing Refresher course every 3 years to review knowledge and practical skills.

## SAFETY AWARENESS REFRESHER

To retain their WJA training cards, water jetting operatives must attend the Safety Awareness Refresher course every three years.

The course reviews essential information in the Safety Awareness course, including: codes of practice, hoses, safety devices, tooling, risk assessment and managing tasks.

Delegates must also undergo the practical element of at least one WJA practical module.

## CLICK TO ASSESS

The WJA is in the process of transitioning from written tests to using the CLiKAPAD digital response system for assessing delegates attending City & Guilds courses.

Under the new system, delegates use digital pads to respond to blocks of multiple choice questions that are asked at intervals throughout the courses,

focusing on specific topics. The instructor can see how questions are answered, so can go over topics again if necessary.

The system helps to counter concerns some delegates have about taking end-of-course written exams. It also makes learning more interactive and enjoyable, and helps WJA approved instructors support delegates with all learning abilities.



CLiKAPAD



# RAISING STANDARDS WJA CODES OF PRACTICE

The WJA is recognised for having developed perhaps the most detailed and advanced water jetting standards in the world.

These are laid out in three codes of practice. The first to be published, in 1982, was the 'Blue Code' for the use of high pressure and ultra high pressure water jetting equipment.

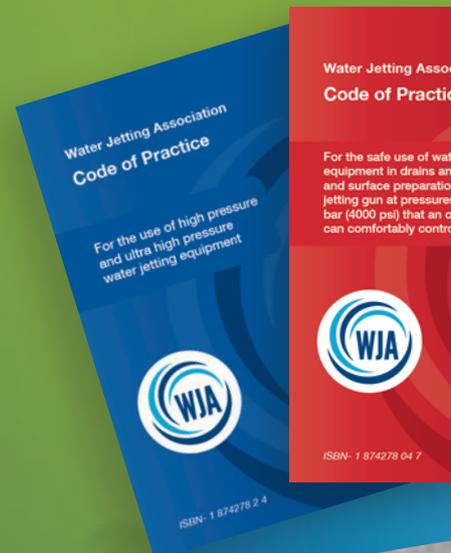
This was followed, in 2002, by the 'Red Code' for safe working and use of water jetting in drains and sewers. In 2023, the Red Code was updated to include guidance on surface preparation with a jetting gun at pressures up to 275 bar (4,000 psi) that an operative can comfortably control. In 2024, the WJA also launched a new Pressure Washing Code of Practice – known as the Purple Code. These codes underpin everything the WJA stands for.

Their strength, from the very beginning, has been the way they were created and are continuously improved and updated by WJA members, the experts in their field. Our codes of practice are practical, robust and detailed. They act as a clear blueprint for delivering safe, high quality water jetting services. They inform the content of all our training courses.

The codes are used by regulatory bodies, like the Health and Safety Executive, as a measure against which water jetting activity is judged.

Companies across the world have adopted the WJA codes of practice as their bible for the safe and effective use of water jetting, leading to treatment delays.

Thanks to the WJA algorithm, employers, first responders, paramedics and hospital medical teams can now follow clear instructions to optimise treatment of water jetting injuries.



# TRANSFORMING THE EMERGENCY RESPONSE TO INJURY

Our priority is always to eliminate risk and to prevent untoward incidents. But you must be prepared if the worst does happen.

That is the principle behind powerful new water jetting injury treatment algorithm incorporated into the WJA's codes of practice.

## 7 bar (100psi)

Estimated lowest pressure at which a fluid injection injury can occur.

## 180 bar (2,600psi)

Across-the-counter consumer pressure washer.

## 2,700 bar (40,000psi)

Ultra high pressure water jetting.

The algorithm details best practice actions at each step of the emergency response from giving first aid to ongoing hospital care.

It is based on research, commissioned by the WJA, by a team of UK emergency medicine physicians and published in the European Journal of Trauma and Emergency Surgery in 2019. By 2023, the research paper had been accessed more than 10,000 times, making it one of the most important references on the topic in the world.

The study found treatment outcomes for people who suffer high pressure fluid injection injuries, where a fluid punctures the skin, are often compromised by underestimation of their severity, leading to treatment delays.

Thanks to the WJA Water Jetting Injury Treatment algorithm, employers, first responders, paramedics and hospital medical teams can now follow clear instructions to optimise treatment of water jetting injuries.

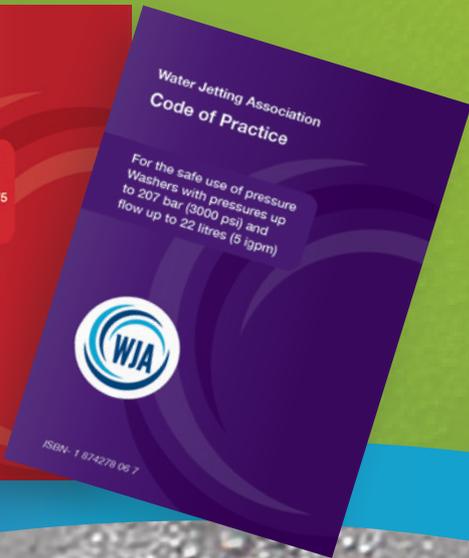


The evidence shows that, without early and correct intervention, the outcome for those injured is often catastrophic, including death, loss of limbs and long-term disability. We strongly advise all parties to observe the WJA's updated guidelines.

**Dr Sancho Rodriguez-Villar LMS, PhD (Cum Laude), EDIC AFICM**  
Intensive Trauma Unit (ITU) Consultant  
and WJA Senior Clinical Advisor



The WJA injury treatment algorithm is available as an easy-to-follow 12-page digital or printed booklet.



# HOW TO BECOME A WJA MEMBER

Our membership structure reflects the fact that water jetting is vital across a range of industrial sectors and involves people and organisations with different technical and financial interests.

**C1**

## **WATER JETTING CONTRACTOR**

A water jetting contractor is defined as a bona fide company or organisation engaged in high and ultra-high pressure water jetting – for example by securing commercial contracts to deliver these services.

**C5**

## **INTERNATIONAL MEMBER**

An international WJA member is a company or organisation engaged in the regular use of high pressure water jetting pumps and accessories from their own works or premises.

**C2**

## **DRAIN AND SEWER CLEANING CONTRACTOR**

A drain and sewer cleaning contractor provides a regular drain and sewer maintenance service, including work secured by competitive tender, but is not limited only to providing an emergency drain blockage clearance service.

**C6**

## **PRESSURE WASH**

A pressure wash member is a business that carries out pressure washing, either as a service for clients, for example an industrial cleaning specialist, or as part of its internal maintenance procedures.

**C3**

## **MANUFACTURER OR HIRER**

A manufacturer or hirer is engaged in the manufacture and/or rental of original high pressure water jetting plant or equipment and/ or the factoring and assembly of skid and/or mobile machines at their own works or premises.

**C7**

## **SMALL DRAINAGE CONTRACTOR**

A small drainage contractor may be franchise holders or start-up businesses. With its lower membership fee and revised criteria, the C7 category makes it easier for them to join the WJA.

**C4**

## **ASSOCIATE MEMBER**

Associate members are companies that are not directly involved in any water jetting operations but are financially linked to and derive significant earnings from their business as suppliers to the water jetting industry.

**BC**

## **BLUE CHIP MEMBER**

The Blue Chip membership programme is designed for large national and international companies in sectors like food, water utilities, oil and gas, and petrochemicals, that rely on water jetting to maintain their operational networks and process equipment.

All membership requests are carefully considered and approved by the WJA Board. To find out more about membership, how to join and our fee structure, contact the WJA. Telephone +44(0)208 320 1090. Email [info@waterjetting.org.uk](mailto:info@waterjetting.org.uk).

# WJA MEMBERSHIP – THE BENEFITS

## 1. Proven success

The WJA has a proven track record for representing members, promoting their interests and raising standards that safeguard safety and encourage innovation.

## 2. A central body for promoting high pressure water jetting

The WJA provides a central co-ordinating organisation for all issues related to water jetting that are of concern to member companies.

## 3. Advice and expertise

**Through its membership of Croner, the WJA gives its members access to free expert advice on:**

- Current legislation, particularly on subjects such as employment, road transport and operational regulations.
- Health, safety and wellbeing.

## 4. Member promotion

The WJA promotes its members through an online members directory. The directory is trusted by organisations needing water jetting services. The WJA also directs organisations that make water jetting enquiries to appropriate contractors in their areas.

## 5. Representation

**As the acknowledged representative organisation for our industry, the WJA works closely with and is consulted by many agencies and regulatory bodies, including:**

- Health and Safety Executive
- Department for Business, Energy and Industrial Strategy
- Department for Transport
- HMRC

## 6. Collaboration

**The WJA also works closely with other organisations that share common interests, including:**

- Association of Hydraulic Equipment Manufacturers (AHEM)
- Association of Offshore Diving Contractors (AODC)
- British Hydraulic Research Group (BHR)
- Freight Transport Association (FTA)
- National Sewerage Association (NSA)
- Construction Skills –National Working Group (CS-NWG)

## 7. Promoting safety

The WJA is deeply concerned about water jetting safety. Our Codes of Practice (CoP) have gained worldwide acceptance and recognition. Supplementary CoP modules for specialist applications are produced.

We have developed the world's most advanced medical guidance for water jetting industries. All trained operatives receive medical cards advising on urgent treatment protocols.

## 8. Education and training

The WJA is the UK's leading provider of water jetting training, accredited by City & Guilds. WJA-registered training providers and WJA-approved instructors also deliver our courses around the world. Members receive regular updates and advice on training and education.

## 9. Supporting research

We support, through sharing expertise, and commission research to further our understanding of water jetting and share findings with our members. This includes research into water jetting injury care (see page 13).

## 10. Promoting our industry

The WJA proactively promotes water jetting in the media, often in partnership with members, and represents the industry at conferences and exhibitions.

## 11. International links

The WJA works with representative bodies and companies around the world. Insights are shared with members, enhancing their ability to monitor and benefit from industry developments.



## TALK TO US

The Water Jetting Association welcomes enquiries from organisations and people who deliver, use, or benefit from water jetting services

Join the WJA

Find out about WJA training

Work with us to promote standards and safety

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