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(Page 1 of 26)

UK Water Industry

INTRODUCTION TO REGULATION AND STANDARDS FROM A WATER INDUSTRY PERSPECTIVE

FOREWORD

This Information and Guidance Note (IGN) has been developed to inform those wishing to understand and navigate the complex and intertwined nature of the many elements that make up the UK water industry.

Its target audiences include those:

- Coming new to the industry
- Changing role or discipline within it
- Searching to establish whether a standard exists on a particular topic
- Simply curious to better understand terminology and relationships whose explanation is not easily found elsewhere.

The need for such a document was recognised following discussions between the Future Water Association (FWA) and the Water UK Standards Board.

With the Board's approval the IGN's development was undertaken by a Task and Finish Group chaired by a representative of the Future Water Association (FWA). The Group contained representatives from the wider industry sector. The draft IGN was open for three-months public comment on the WUK Standards Board website before finalisation and publication in its present form.

This IGN isn't solely about standards. However, it uses standards (water company; water industry; British; European; International) as a means of

illustrating relationships between industry stakeholders – all of whom employ standards in some way to support their interactions. It doesn't refer to individual standards, except as examples, but should help the user better understand how standards are created, maintained and referenced in support of those relationships.

It aims to identify bodies that create standards and how to access and interact with those bodies' standards outputs.

This IGN illustrates these relationships mainly through use of 'concept diagrams' – although occasionally flow charts are adopted where these are better suited to describe complex sequences. For those unfamiliar with concept diagrams their principles are explained in Section 2.

The formatting of Section 3 is designed such that the concept diagram and its associated text can be read side by side in either printed or digital displays.

The concepts described in this IGN have been reasonably stable - as have the interrelationships between them. However, they are dynamic and there can be no guarantee that they haven't changed since this document was published. It is for the user to establish whether the concepts and inter-relationships described still hold.

Note: During the preparation of this document, the Independent Water Commission published its final report making recommendations likely to lead to significant change to some of the organisations and interrelationships shown in this document. There is an aspiration to update this document when the way forward is known.

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This IGN does not purport to include all the necessary provisions of a contract, and users are responsible for its correct application. Reliance on this IGN does not itself confer immunity from legal obligations.

Reference to a European Standard, British Standard, Water Industry Specification or any other specification applies equally to any equivalent specification.

Information contained in this IGN is given in good faith. Neither Water UK nor the members of its Standards Board can accept any responsibility for actions taken as a result.

It has been assumed in the drafting of this IGN that the interpretation of its provisions is entrusted to appropriately qualified and experienced people, for whose guidance it has been prepared.

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1. SCOPE

This IGN is primarily intended for use by UK water industry stakeholders, e.g. water companies, specifiers, designers, procurement teams, manufacturers and contractors. It addresses, in a non-exhaustive way, a range of standards and regulations relevant to the UK water industry. Topics selected include several regularly found to generate uncertainty around their understanding and interpretation, including:

- Legal and regulatory requirements.
- National (BS), European (EN) and international (ISO) standards.
- Industry generated standards, such as WIS and IGN, WIMES, CESWI, and other third-party guidance.
- Individual water company standards.

The document identifies, at a relatively high level, the interrelationships between the different concepts described, but does not typically detail individual standards or regulations in those relationships.

In this first issue the document focuses on England and Wales but the opportunity exists to expand its scope to eventually cover the four UK 'nations'.

This document does not cover surface water, except where it enters and is conveyed within a water company wastewater network. The responsibility for surface water involves multiple potential stakeholders/owners, of such infrastructure – for example: highways drainage; and SuDS (Sustainable Drainage Schemes), whether adopted by local authorities or unadopted. In addition, there are significant regional differences in approach. It is hoped that the potential implementation of Schedule 3 of the Floods and Water Management Act 2010 in England will bring more clarity and alignment between the regions.

2. CONCEPT PRINCIPLES

2.1 In terminology work, the use of concepts has been well established, and a 'concept' is defined [ISO 1087: 2019 [1]] as a 'unit of knowledge created by a unique combination of characteristics.'

The relationships between concepts can be shown graphically and there are three primary forms of concept relationships used: generic, partitive, and associative [ISO 24513:2019 Appendix B [2]]

2.2 Generic relations are where the subordinate concepts inherit all the characteristics of the higher-level concept and contain descriptions of these characteristics which distinguish them from the parent and other (sibling) concepts. Generic relations are depicted by a fan or tree diagram without arrows.

Figure 1 illustrates the high-level concept of a 'Valve' (specifically a flow/stop valve) which has generic relationships with 'Gate', 'Ball' and 'Butterfly' valves (amongst others) which all have the same characteristics of a flow/stop valve. Similarly, 'Resilient Seat' and 'Metal Seat' gate valves have the same characteristics as the more general concept of a 'Gate Valve'.

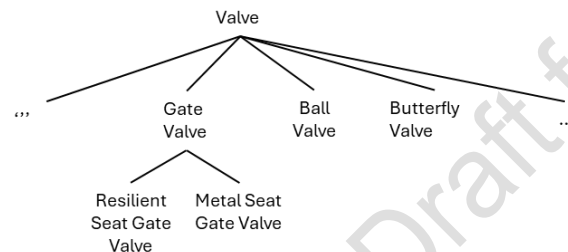


Figure 1 -- Graphical representation of a generic relation

NOTE: the use of ... indicates that the relationship shown is not exhaustive and other concepts exist but are not shown.

2.3 Partitive relations are where subordinate concepts form constituent parts of the parent concept. Partitive relations are depicted by a rake without arrows.

Figure 2 illustrates the main constituent parts of a gate valve [Figure 2].

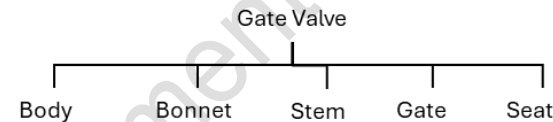


Figure 2 -- Graphical representation of a partitive relation

2.4 Associative relations are helpful in identifying the nature of the relationship between one concept and another within a concept system. Associative relations are depicted by a line with arrowheads at each end.

Figure 3 illustrates the association between 'Gate Valve' and other concepts such as standards, flow meters, flanges and actuators.

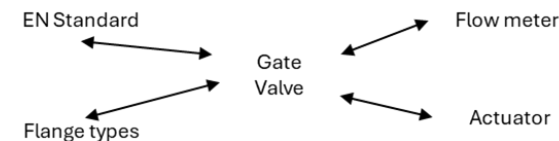


Figure 3 -- Graphical representation of an associative relation

2.5 These three different relationship types can be combined to graphically show the relationships in a more complicated concept system. This IGN contains a variety of 'concept diagrams' illustrating some of the main concept systems within the water industry in England & Wales.

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Draft for public comment

3. CONCEPT DIAGRAMS

3.1 Standards Bodies

The World Standards Cooperation (**WSC**) is a high-level collaboration between the **IEC** (International Electrotechnical Commission), **ISO** (International Organization for Standardization) and **ITU** (International Telecommunication Union), all based in Geneva.

3.1.1 ISO

The **International Organization for Standardization** is an independent, non-governmental, international standard development organisation composed of representatives from the national standards organisations of member countries.

There are 174 national members in three membership categories:

- The 129 **Member bodies** are national bodies considered the most representative standards body in each country. They can participate and vote in technical and policy meetings and can adopt ISO standards nationally.
- The 40 **Correspondent members** are countries that do not have their own standards organisation. They can attend ISO meetings as observers and can adopt ISO standards within their membership territory. Examples of Correspondent members are Albania and The Gambia,
- There are 4 **Subscriber members** (*Antigua and Barbuda, Belize, Grenada, Sao Tome and Principe*) i.e. countries with small economies. They keep up to date with ISO's work but don't participate and do not adopt ISO standards nationally.

3.1.2 CEN

The 34 current **CEN Members** are the National Standards Bodies (**NSBs**) of all member states of the European Union; three of the EFTA members; and UK, North Macedonia, Turkey, Serbia.

The 6 **CEN Affiliates** are **NSBs** of potential candidates for EU membership and have observer status only.

The 12 **CEN Partner** organizations have an interest in cooperation at overall corporate and technical level with CEN. They have observer status.

CSB (Companion Standardization Body) is open to a **NSB** which is a member or corresponding member of **ISO**. The 16 CSBs have observer status.

The three **European Standardisation Organizations** recognised by the European Union (**CEN**, **CENELEC** (European Committee for Electrotechnical Standardization) and **ETSI** (European Telecommunications Standards Institute)) cooperate on policy and technical matters of common interest.

CEN and CENELEC are both based in Brussels and operate a single platform.

3.1.3 NSBs

A National Standards Body is the standardisation organisation that is a country's member of CEN or ISO. The NSBs shown in Figure 4 are **BSI** (UK), **AFNOR** (France), **DIN** (Germany), **NEN** (The Netherlands), **ANSI** (USA) and **JISC** (Japan).

Individual and organisational participation in standards work is normally through the technical committees of the NSBs (see 3.3).

3.1.4 Co-operation agreements

The **Vienna Agreement** (1991) covered technical co-operation between CEN and ISO. New standards projects are jointly planned between CEN and ISO. Wherever appropriate priority is given to ISO provided that international standards meet European legislative and market requirements.

The **Frankfurt Agreement** (2016) is a similar co-operation agreement between CENELEC and IEC.

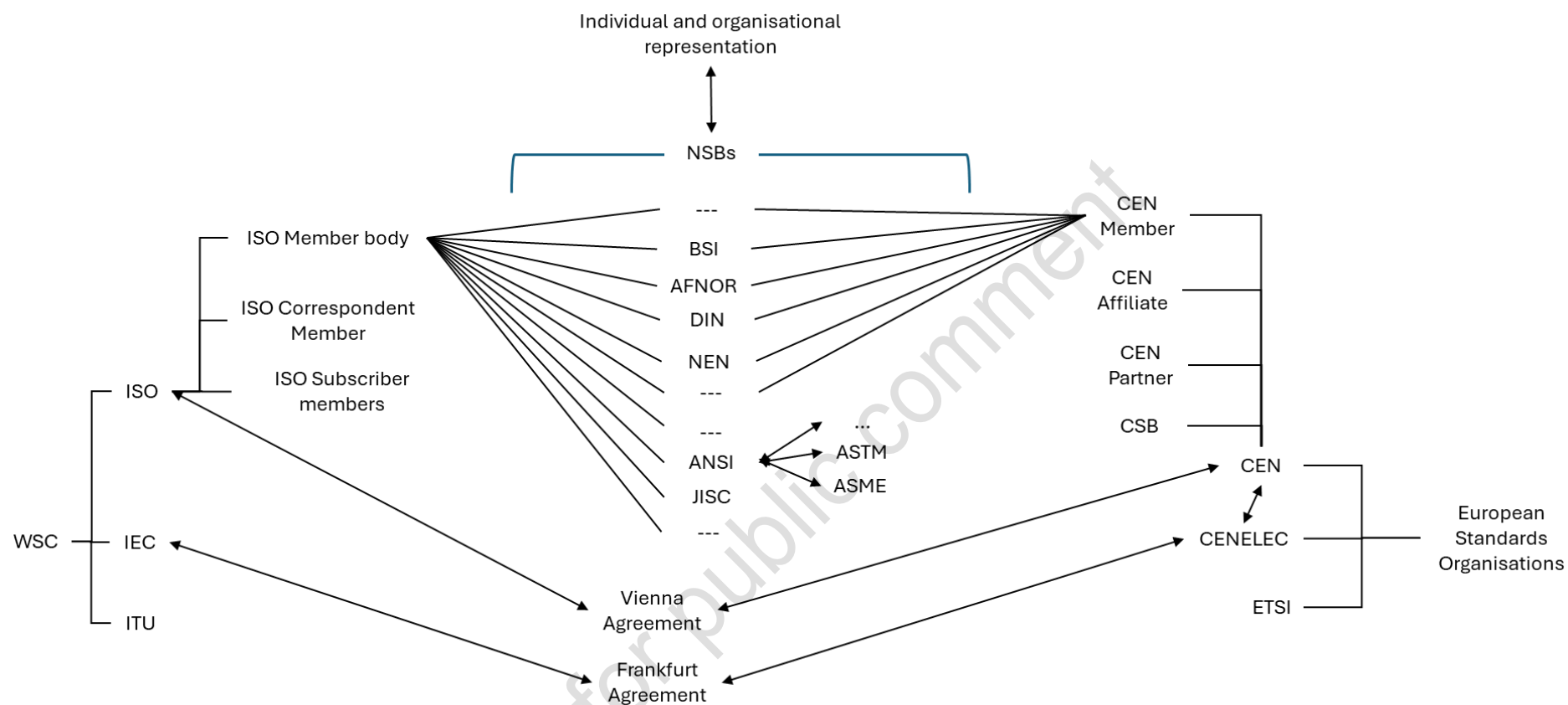


Figure 4 Relationship between ISO, CEN and BSI

3.2 BSI Publications

Figure 5 shows the different types of standards that are published by BSI and the differences between them.

Note: publication is increasingly digital, and standards are normally downloaded from the BSI shop.

3.2.1 Standards

Membership of **CEN** obliges **BSI** to adopt and publish all European Standards as identical British Standards (prefixed BS EN) and to withdraw pre-existing British Standards that are in conflict. An example would be BS EN 1990.

Standards produced by **ISO** can be adopted by CEN as an EN ISO where no existing or conflicting EN standard exists. In this case BSI would then be obliged to adopt it as a British Standard BS EN ISO. A good example would be BS EN ISO 9001.

The same principle applies to **IEC** standards, which would result in a BS EN ISO/IEC standard, e.g. BS EN ISO/IEC 25059.

Where CEN decides not to adopt an ISO or IEC standard, BSI may choose to adopt it in the UK as a BS ISO or BS ISO/IEC, e.g. BS ISO 4997 and BS ISO/IEC 18026.

Where no EN or ISO standard exists for a particular UK requirement, BSI can produce a British Standard, e.g. BS 9295.

3.2.2 Technical Specifications

Technical Specifications (**TS**) are normative documents, used when various alternatives do not allow agreement on a Standard, or for providing specifications in experimental circumstances and/or evolving technologies.

Technical Specifications Produced by ISO or IEC do not have to be adopted as a European standard or adopted in the UK. If they are adopted in the UK, they are published as a Published Document (PD) e.g. PD ISO/TS 24399.

Similarly, Technical Specification produced by CEN or CENELEC do not have to be adopted by BSI. However, unless there is substantive reason not to, the default is adoption as a Published Document, e.g. PD CEN/TS 17152-4.

3.2.3 Technical Reports

Technical Reports (**TR**) are informative documents that provide information on the technical content of standardisation work. Strictly speaking they are not adopted in the UK but are available as a Public Document, e.g. PD CEN/TR 18160.

3.2.4 PAS and Flex

Both Publicly Available Specification (**PAS**) and **Flex** are sponsored 'fast-track standards' establishing best practices for products, services, and processes, to meet specific industry needs quickly e.g. PAS 2080.

BSI Flex enables rapid and flexible standardisation in situations where ideas are developing and is updated with a different version numbers, e.g. BSI Flex 2072 v2.0:2025 (which was sponsored by Connected Places Catapult)

Both PAS and Flex standards can be easily withdrawn, either when their usefulness has passed, e.g. Flex standards associated with the Covid pandemic, or developed into full standards.

Note: full titles of all the standards given as examples in this section can be found in References under [3].

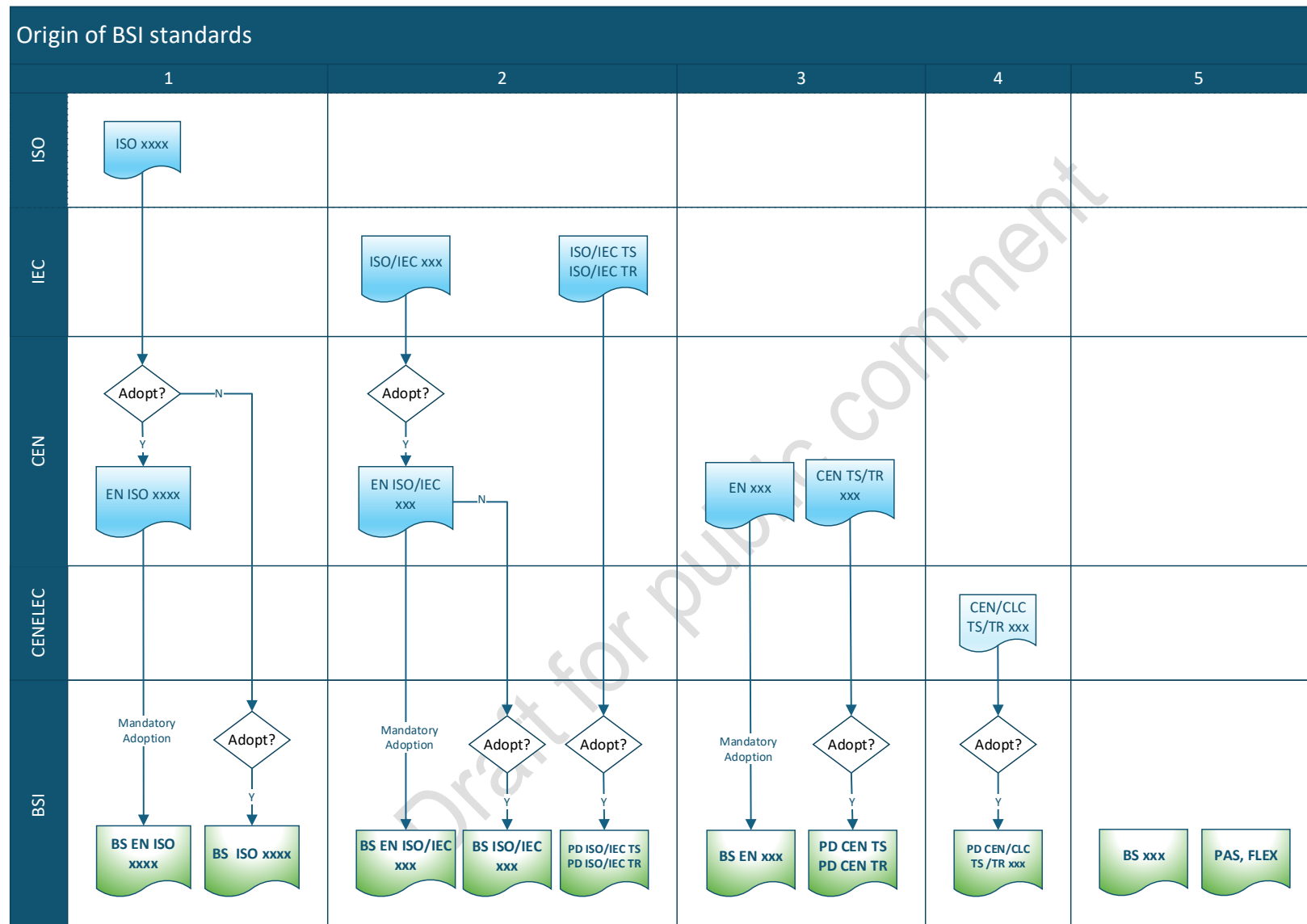


Figure 5. Types of BSI publication

3.3 BSI Committee Structure

3.3.1 BSI

The British Standards Institution is designated as the UK's National Standards Body by the UK government. It produces British Standards, and, as the UK's National Standards Body, is also responsible for the UK publication, in English, of international and European standards.

Figure 6 is a representation of part of the BSI committee structure related to the built environment. It should be noted that it is not strictly hierarchical and other sectors may not follow an identical structure.

3.3.2 BSI Board

The **BSI Board** oversees the organization's strategic direction and governance and has several different board committees including the Standards Policy & Strategy Committee (SPSC).

3.3.3 SPSC

SPSC (Standards Policy and Strategy Committee) is responsible for advising and reporting to the BSI Board on the preparation of British Standards. It provides advice on priorities for standards development; processes for standards facilitation and changes in business or society which could imply changes to the National Standards Body. It resolves disputes in BSI's standards development field and is responsible for **BS 0** [4].

SPSC establishes sector and technical committees, approves their constitutions and terms of reference, appoints their chairs, and gives direction on items of common interest.

3.3.4 Sector and Advisory Committees

There are a number of **Sector Committees** which are responsible to the SPSC for setting policy and strategy to meet the standardisation needs of a particular sector.

Sector Committees shown are CB/- responsible for the construction and built environment (excluding fire and steel standardisation) and FSH/0 responsible for the standardisation needs of the Fire and

Rescue Service, including construction, testing, maintenance and use.

Under the direction of the relevant Sector Committees, the **Advisory Committees** are responsible for policy and strategy in a particular area. As examples, **CB/2** is responsible for aspects of standardisation in the field of engineering design and construction and **CB/3** is responsible for reviewing market demands and regulatory drivers for the safe, compliant, and efficient use of construction products.

Sector and Advisory Committees do not participate in the drafting of standards and do not directly control the work of the technical committees; they do advise the technical committees on areas of interest.

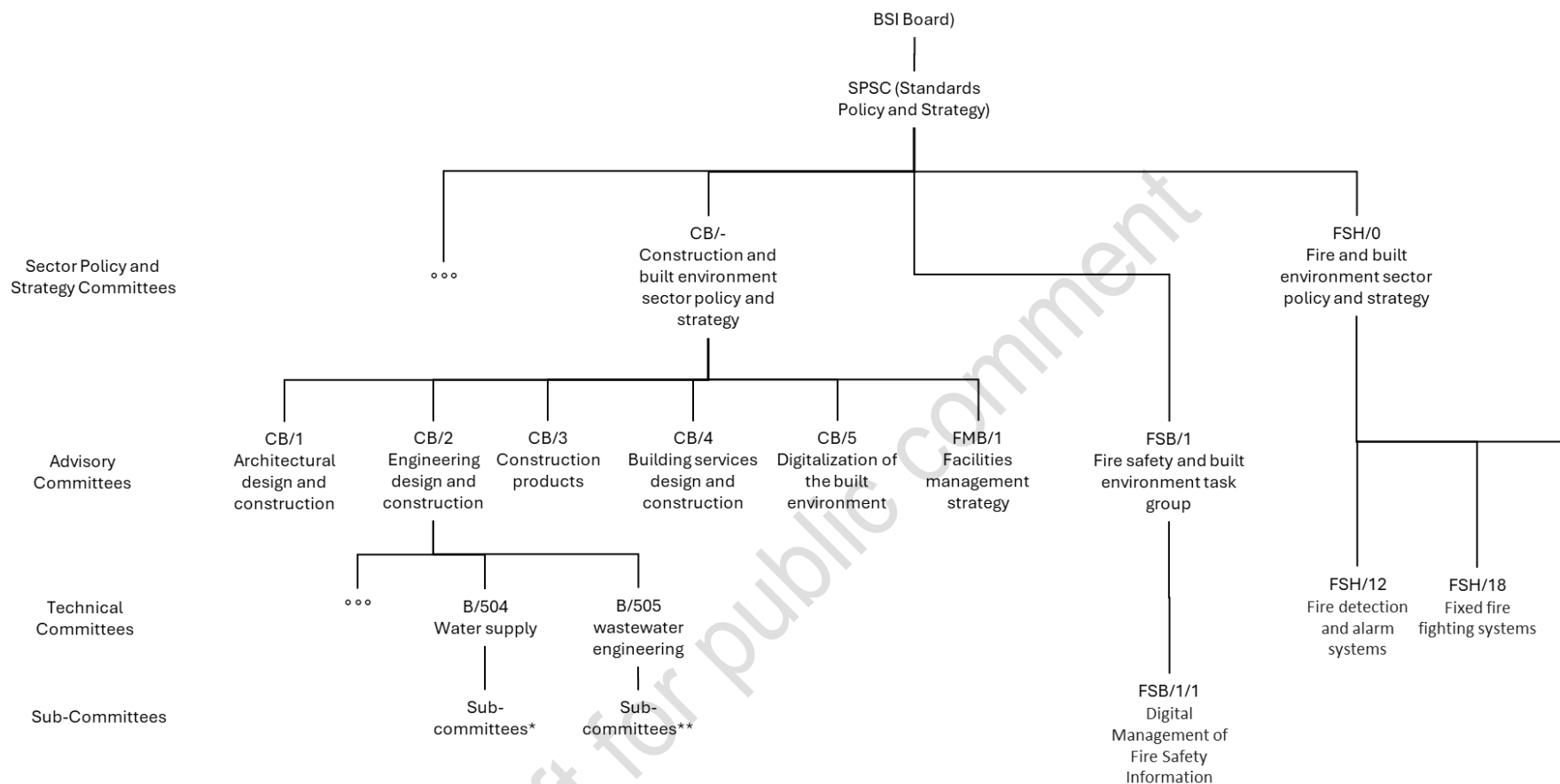
Note: FSB/1 was created as a forum for a number of existing Fire Safety and Built Environment technical committee experts, and seconded experts, to discuss formal findings emanating from the various official Grenfell Tower fire investigations and reviews with a view to providing advice on standardisation needs.

3.3.5 Technical Committees and Sub-Committees

Each Sub-sector Advisory Committee will have a number of **Technical Committees** dealing with standards in a more tightly defined area. Work on standards takes place at this level or in their Sub-committees who work in even more specific areas.

Ad hoc project groups can be set up for specific purposes, such as working on a specific standard and these are disbanded at the completion of the project.

Technical Committees will normally mirror a **CEN Technical Committee** and Sub-committees will often mirror a CEN **Working Group**. In the examples shown in the figure, **B/504** is responsible for standards in Water supply and mirrors CEN **TC 164** (see 3.4); **B/505** covers Wastewater engineering and mirrors CEN **TC 165** (see 3.5).



* See Figure 7

** See Figure 8

Figure 6. Outline BSI structure – Construction and built environment

3.4 BSI CEN Mirrors – Water Supply

3.4.1 BSI

See section 3.3 for the BSI structure.

The **BSI Board** oversees the Standards Policy & Strategy Committee (**SPSC**). The SPSC creates sector boards which in turn establish **Technical Committees**. **Sub-Committees** are created by the parent Technical Committee to undertake specific areas of work.

The BSI Committee Service Centre (**CSC**) is the support function for the Technical Committees and Sub-Committees.

3.4.2 CEN

The European Committee for Standardisation Technical Board, *Bureau Technique* (**CEN BT**) is responsible for the creation of the Technical Committees (**CEN TC**) and decides on any technical questions. CEN TCs will create **Working Groups** to work on specific areas.

Note: previously, CEN TCs could establish Sub-Committees, but this is no longer allowed by CEN BT.

CEN-CENELEC Management Centre (**CCMC**) is the support function for the Technical Committees and Working Groups and sits under the CEN-CENELEC Director General (**CEN DG**)

3.4.3 Mirroring

In principle, **BSI Technical Committees** and **Sub-Committees** will 'mirror' the corresponding **CEN Technical Committees** and **CEN Working Groups**. The BSI mirror Committee will nominate UK Experts to attend and participate in the CEN committees working on European standards. In practice, however, the mirroring is often not exactly on a one-to-one basis.

In Figure 7, for example, **B/504** is the Technical Committee that mirrors **TC 164** (Water Supply). It can be seen that not all the CEN Working Groups within TC 164 are mirrored by B/504 sub-committees. This could be due to no application in the UK, e.g. concrete pipes (**WG 5**) and cement fibre pipes (**WG 6**) are not

generally used in UK water supply, overlapping responsibilities, e.g. water treatment (**WG 9**) and in-situ generation of biocides (**WG 16**) being considered part of water treatment (**B/504/10**), or little UK interest (in which case any standards work is taken at B/504 level).

Where a 'mirror' exists, representatives from the UK mirror committee will represent the UK at meetings of the TC or WG and participate in developing new European standards. They will report back to the UK mirror committee on the work being undertaken.

The mirror Sub-Committee will make comments on draft standards and indicate a positive or negative vote on whether standards should proceed to publication. Formally, the comments and votes are submitted by the parent Technical Committee to the parent CEN TC.

3.4.4 Liaison between BSI Committees

Where the work in one BSI Technical Committee or Sub-Committee could have potential interest or impact on the work of another Technical Committee a liaison is established. As an example, in figure 7, CEN TC 164 **WG3** is mirrored by BSI **EH/6** (in the BSI Health and Environment sector). EH/6 then has a liaison with B/504 and a representative of EH/6 would attend the meetings of B/504 and/or prepare a report of relevant activity.

Similarly, **PRI/88** Plastic piping systems and **PSE/10** Iron pipes and fittings, also liaise with B/504.

NOTE: Within BSI, CEN or ISO, Technical Committees and Sub-committees can be created (and disbanded) in response to changing requirements. As an example, in 2025 CEN BT created TC 748 to cover 'Water Resilience and Sustainable Use' in response to climate change impacts and bringing together expertise on water management, stewardship, conservation, and reuse.

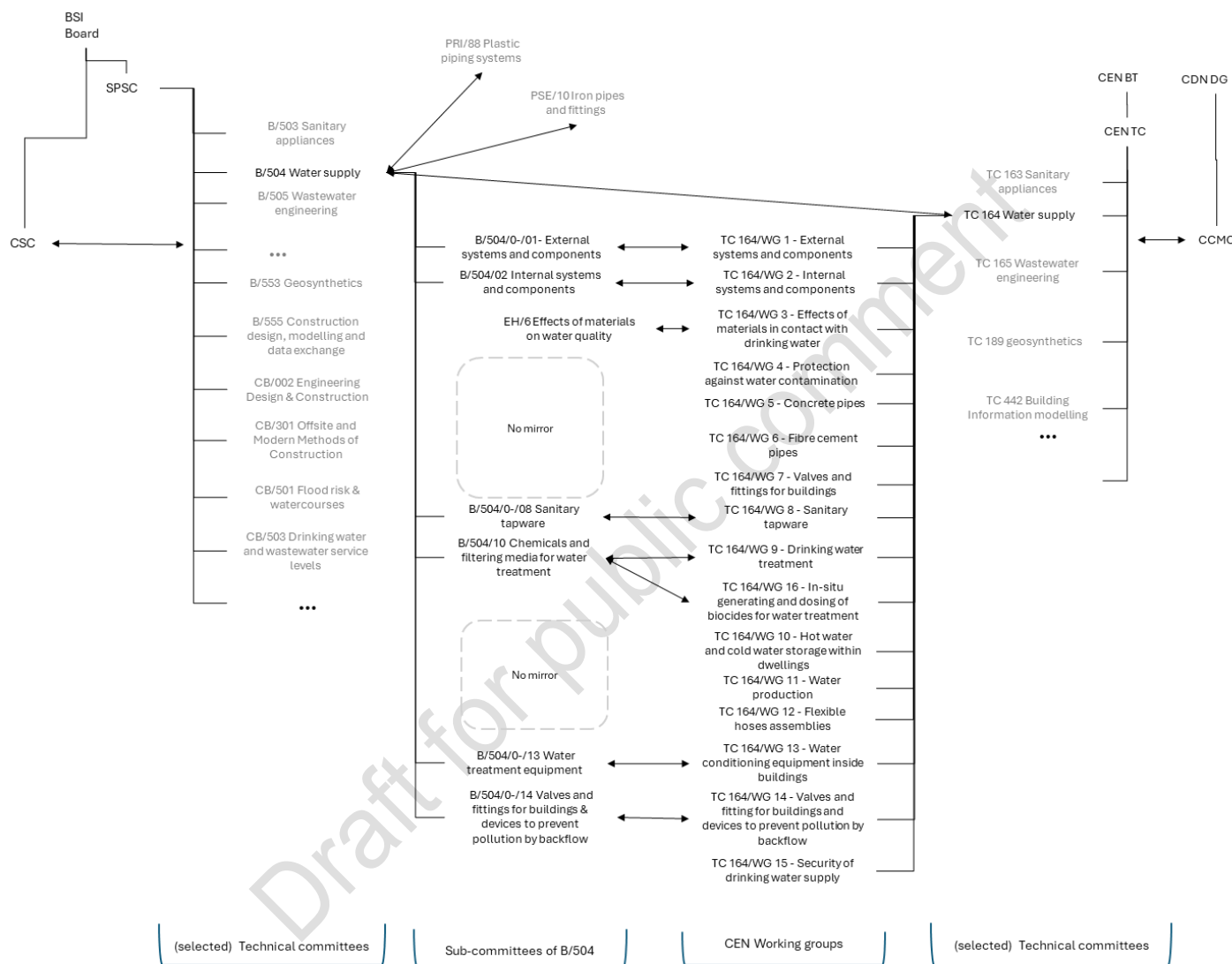


Figure 7 BSI CEN Mirroring – Water supply

3.5 Mirroring – Wastewater Engineering

3.5.1 BSI

See section 3.3 for the BSI structure.

The **BSI Board** oversees the Standards Policy & Strategy Committee (**SPSC**). The SPSC creates sector boards which in turn establish **Technical Committees**. **Sub-Committees** are created by the parent Technical Committee to undertake specific areas of work.

The BSI Committee Service Centre (**CSC**) is the support function for the Technical Committees and Sub-Committees.

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The European Committee for Standardisation Technical Board, *Bureau Technique* (**CEN BT**) is responsible for the creation of the Technical Committees (**CEN TC**) and decides on any technical questions. CEN TCs will create **Working Groups** to work on specific areas.

Note: previously, CEN TCs could establish Sub-Committees, but this is no longer allowed by CEN BT.

CEN-CENELEC Management Centre (**CCMC**) is the support function for the Technical Committees and Working Groups and sits under the CEN-CENELEC Director General (**CEN DG**)

3.5.3 Mirroring

In principle, BSI **Technical Committees** and **Sub-Committees** will 'mirror' the corresponding CEN **Technical Committees** and CEN **Working Groups**. The BSI mirror Committee will nominate UK Experts to attend and participate in the CEN committees working on European standards.

In Figure 8, for example, **B/505** is the Technical Committee that mirrors **TC 165** (Wastewater Engineering). Unlike Water Supply in Figure 7, the sub-committees under B/505 mirror the TC 165 working groups on a one-to-one basis.

Where a 'mirror' exists, representatives from the UK mirror committee will represent UK interests at meetings of the TC or WG and participate in developing new European standards. They will report back to the UK mirror committee on the work being undertaken.

The mirror Sub-Committee will make comments on draft standards and indicate a positive or negative vote on whether standards should proceed to publication. Formally, the comments and votes are submitted by the parent Technical Committee to the parent CEN TC.

3.5.4 Liaisons

Where the work in one BSI Technical Committee or Sub-Committee could have potential interest or impact on the work of another Technical Committee a liaison is established. For example, in figure 8, **PRI/88** Plastic piping systems, and **PRI/70** Elastomeric seals for joints in pipework and pipelines, have a liaison with B/505 and a representative of each would attend the meetings of B/505 and/or prepare a report of their relevant activity.

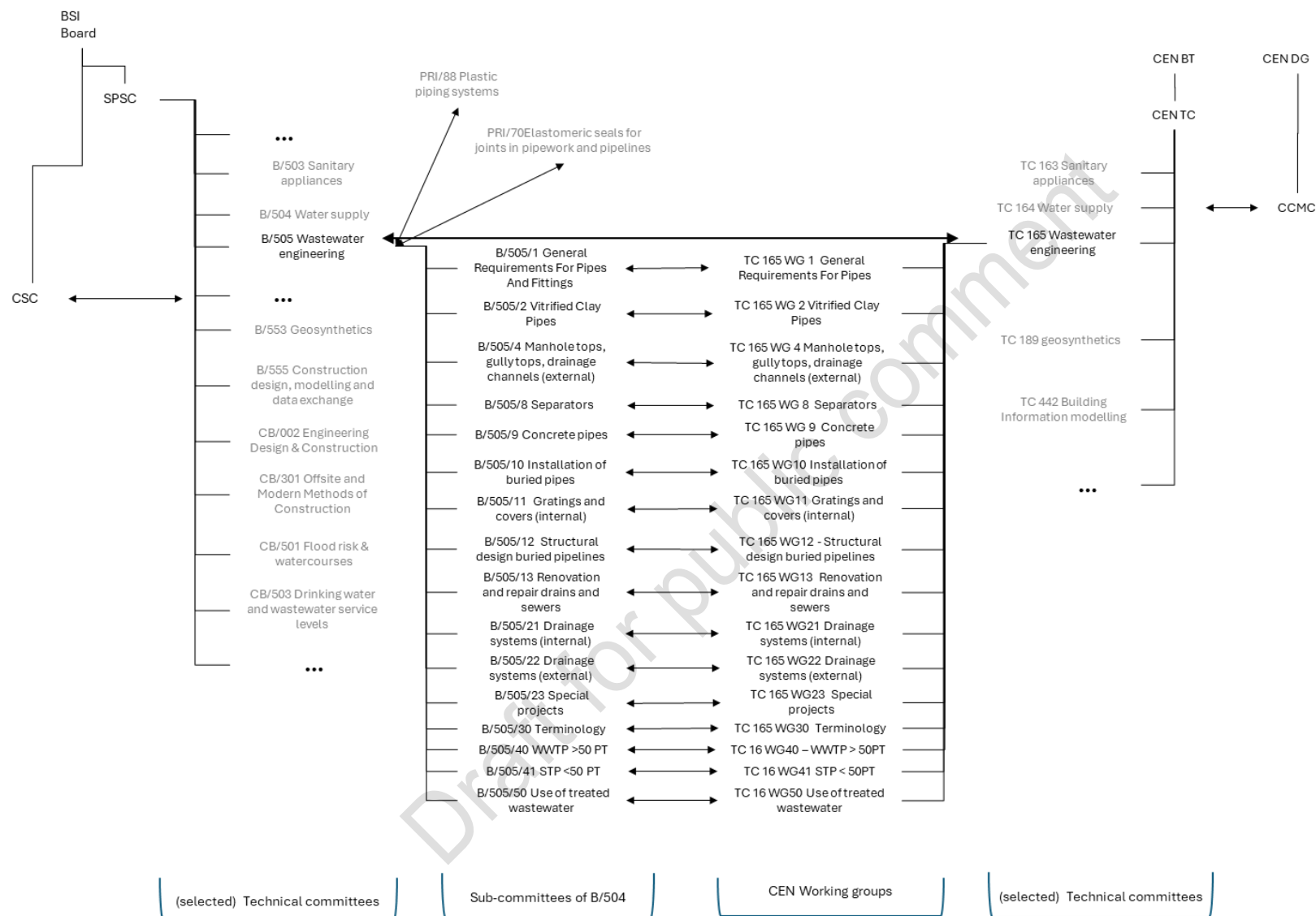


Figure 8 BSI CEN Mirroring – Wastewater engineering

3.6 ISO Committee structure

In ISO, the Technical Committees are managed by the **Technical Management Board** with support from the **Central Secretariat**. Both are under the **ISO Council** which, in turn, is under the **ISO General Assembly**.

There are over 600 **ISO Technical Committees** covering all aspects of standardisation. Only a select few are shown in Figure 4.

Each Technical Committee could cover a broad subject area e.g. TC 224 covers Drinking water, wastewater and stormwater systems and services, and can have several **Working Groups** that would be developing standards in different areas within the overall subject area.

*Note: Some Technical Committees have **Sub-committees** which may then have Working Groups, e.g. ISO/TC 138/SC 1/WG 4 is TC 138 Plastics pipes, fittings and valves for the transport of fluids - SC1 Plastics pipes and fittings for soil, waste and drainage (including land drainage) - WG4 Plastics piping systems for underground drainage and sewerage.*

ISO has 129 Member bodies and the areas of interest and classification are not based on the CEN committee structure. This results in overlap and gaps in the coverage compared to CEN and BSI. Direct mirroring is not undertaken by BSI. As the example shown in Figure 9, ISO **TC 224** Working Group areas do not align with existing CEN/BSI classification. In this case, **CB/503** Drinking water and wastewater service levels, takes the BSI lead on working with all TC 224 Working Groups and would liaise with other BSI Committees as appropriate.

Conversely, flood risk seems to be a particular UK concern which is not mirrored in other ISO Members. Consequently, **CB/501** Flood Risk and Watercourses does not have a counterpart in ISO (nor CEN).

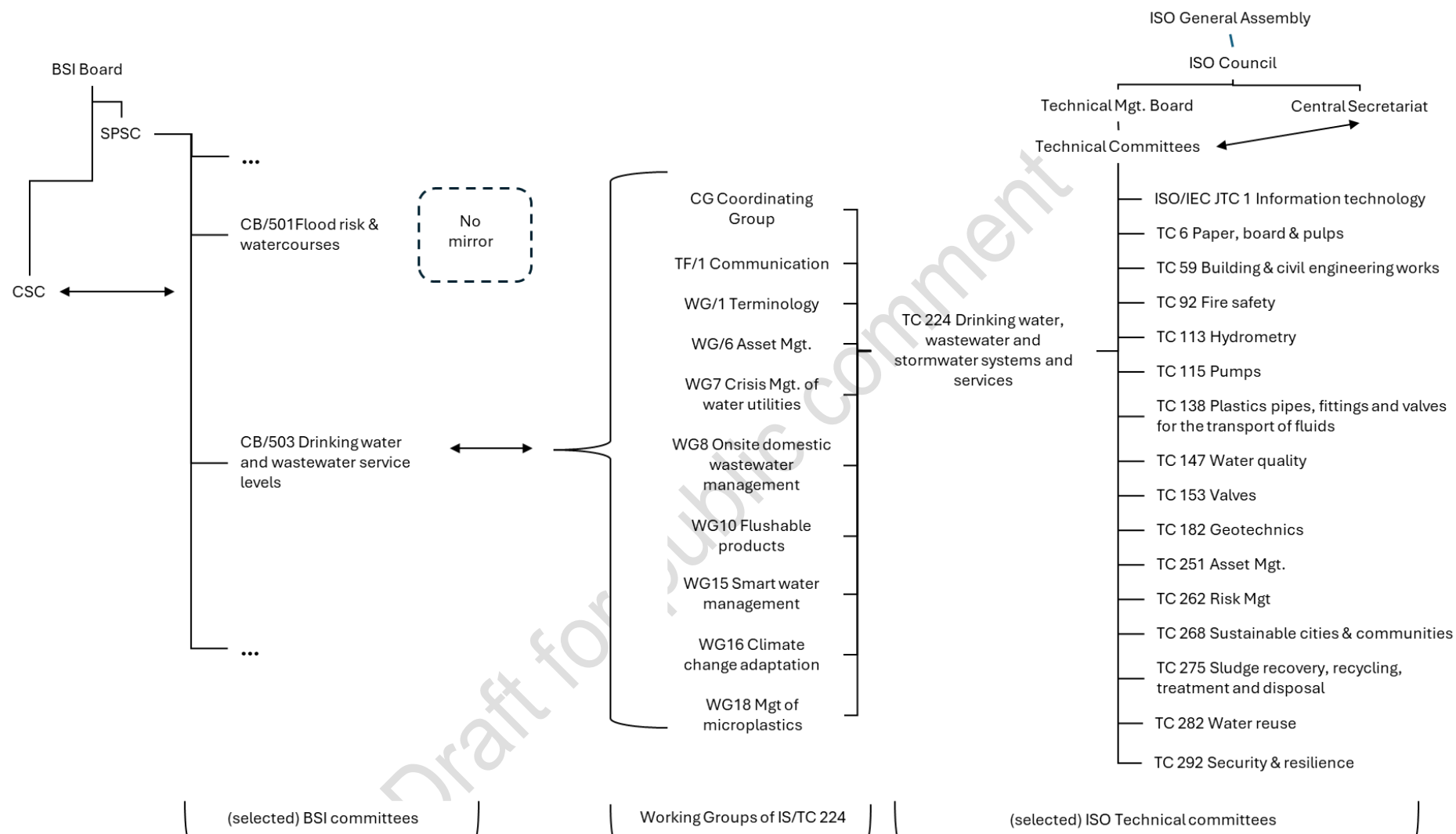


Figure 9 ISO Committee structure and relationship with BSI

3.7 Regulation of the water industry

3.7.1 Government

The **Parliament** of the United Kingdom of Great Britain and Northern Ireland is the supreme legislative body of the UK. Legislation in the form of Bills are debated in the House of Commons and discussed in the House of Lords. If passed, they become Acts and form the basis of regulation, for example The **Water Supply (Water Quality) Regulations 2018** and The **Water Supply (Water Fittings) Regulations 1999**

The **Government** is the central executive authority of the UK, led by the Prime Minister, who selects the various ministers for the **Government departments** and other duties. Ministers must be drawn from and accountable to Parliament.

3.7.2 Government Departments and other bodies

Note: For more detailed information on Department sections, Executive Agencies and other public sector bodies, see Appendix A.

The Government is divided into departments that each have responsibility for putting government policy into practice.

Examples of Government departments, shown in figure 10, are Department for Business and Trade (**DBT**), Ministry of Housing, Communities & Local Government (**MHCLG**), Department for Work and Pensions (**DWP**), and Department for Environment Food and Rural Affairs (**Defra**).

The Drinking Water Inspectorate (**DWI**) is a section within Defra to ensure that water supplies are safe and drinking water quality is acceptable. As part of this role DWI monitors water quality as supplied to customers and (with **Water UK**) the application of **Principles of Water Supply Hygiene**. It also gives **Regulation 31** approval for products used in water supply.

The Building Safety Regulator (**BSR**) is an Executive Agency of MHCLG.

3.7.3 Non-ministerial government departments

Non-ministerial government departments (**NMGDs**) deal with matters for which ministerial oversight has been judged unnecessary or

inappropriate but they will have a sponsoring ministry. Some fulfil a regulatory or inspection function, and their status is therefore intended to protect them from political interference.

- The Water Services Regulation Authority (**Ofwat**) is the economic regulator of the water and sewerage industry.
- The Competition and Markets Authority (**CMA**) is responsible for, amongst other things, investigating possible anti-competitive agreements under the Competition Act 1998.

3.7.4 Non-departmental public bodies

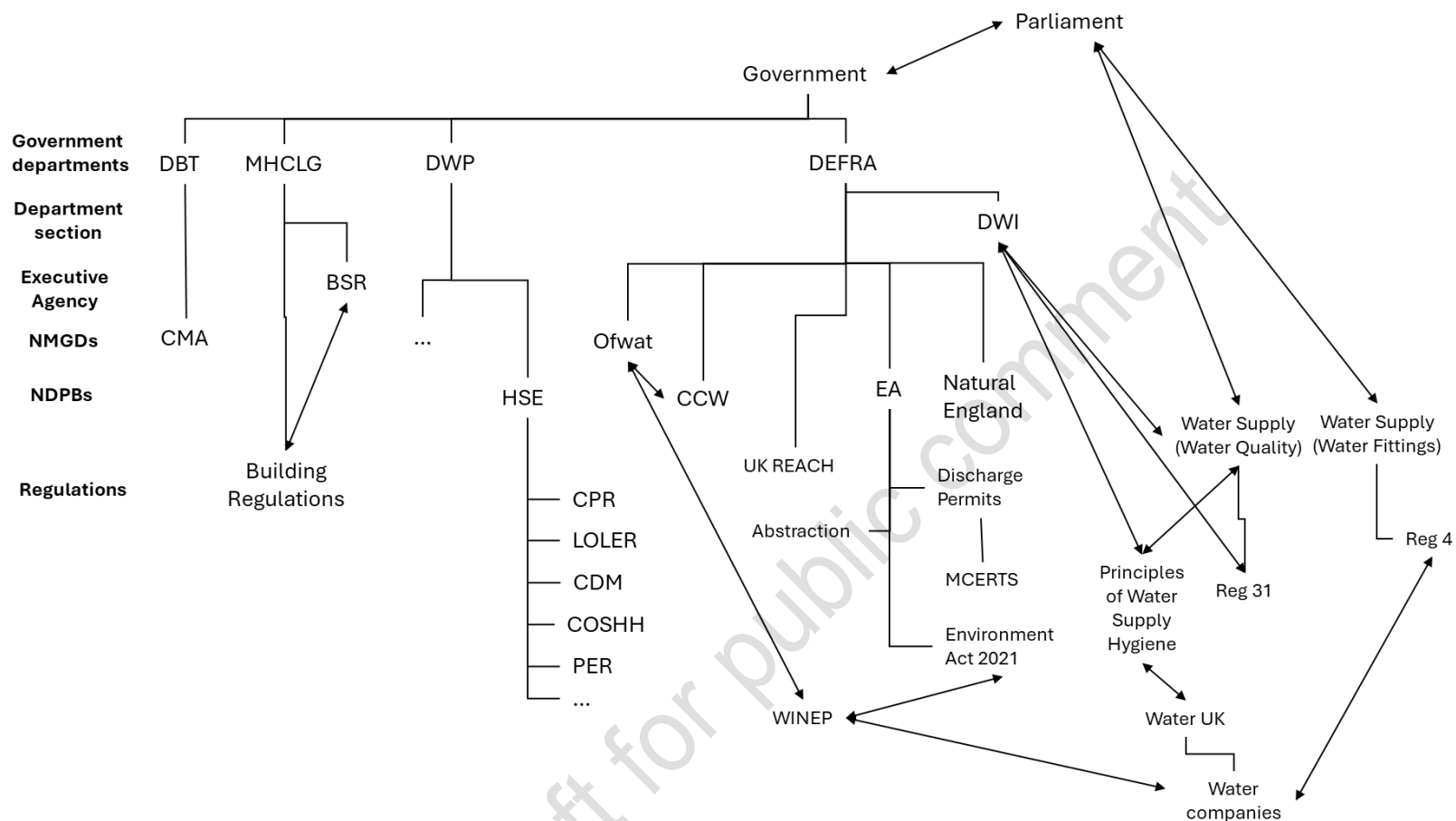
Non-departmental public bodies (**NDPBs**) are public sector organisations that have a role in the process of national government but are not part of a government department. NDPBs carry out their work largely independently from ministers;

The Health and Safety Executive (**HSE**), regulates and enforces workplace health, safety and welfare. Some of the regulations pertinent to the water industry are Construction Products (**CPR**), Lifting Operations and Lifting Equipment (**LOLER**), Construction (Design and Management) (**CDM**), Control of Substances Hazardous to Health (**COSHH**) and Pressure Equipment (**PER**). HSE is also the administrator of the Building Safety Regulator (**BSR**).

- Consumer Council for Water (**CCW**) represents the interests of water and sewerage consumers in England and Wales.
- The Environment Agency (**EA**) is responsible for the protection and enhancement of the environment. In the water arena, the EA controls discharges to the aquatic environment, including sewage effluents through Environmental **Discharge Permits**, which are monitored through the Monitoring Certification Scheme (**MCERTS**). The EA manages the use and conservation of water through the issue of Water **Abstraction** Licences.

3.7.5 Other regulation

The Registration, Evaluation, Authorisation and Restriction of chemicals (**UK REACH**) is controlled by Defra.



Note 1: There are other pertinent regulatory bodies, e.g. financial, outside the scope of this document.

Note 2: This diagram applies to England only.

Figure 10 Regulation of the water industry

3.8 Regulation in IT/OT

3.8.1 What is IT/OT?

IT/OT refers to the integration of Information Technology (IT) and Operational Technology (OT) systems, which are traditionally separate, to improve efficiency, decision-making, and operational processes. The key difference between IT and OT is that IT focuses on managing information and data, while OT focuses on monitoring and controlling physical processes and equipment.

3.8.2 Data protection and provision

Note: see Appendix A for description of government entities.

DSIT, the Department for Science, Innovation and Technology is a ministerial department of government, formed in 2023 by a merger of the Department for Business, Energy and Industrial Strategy (BEIS) and the Department for Digital, Culture, Media and Sport.

There are many child agencies of DSIT covering its broad range of responsibilities, including **UKRI** (UK Research and Innovation, a non-departmental public body that directs research and innovation funding), the **Met Office** (an executive agency), **Ordnance Survey** (a government-owned limited company), and the **Information Commissioner's Office**, a non-departmental public body, which reports directly to parliament. It is the independent regulatory office dealing with all aspects of data protection and provision.

In data provision, the Freedom of Information Act (**FOI**) is probably the best known, in the context of FOI requests being made to public bodies. The Environment Information Regulations (**EIR**) mandated the right of access to environmental information held by UK public authorities.

Note: Following the Supreme Court ruling (Fish Legal vs 3 Water Companies and the Information Commissioner) Water Companies are considered as Public Bodies under EIR but, unlike Scotland and Northern Ireland, not under FOI.

INSPIRE (Infrastructure for Spatial Information Regulations), mandates the creation and sharing of spatial data by public bodies in the UK.

In the UK, personal data is governed by the UK General Data Protection Regulation (UK **GDPR**) and the Data Protection Act (**DPA**). The Data Use and Access Act 2025 (**DUAA**) amends, but does not replace, UK GDPR and DPA.

Note: the ISO/IEC 27000 [5] family of standards provides a comprehensive framework for information security management.

3.8.3 Cybersecurity

National security, including cybersecurity, falls under the Foreign Office and the Home Office.

The **Foreign Office** is responsible for, amongst other things, the Secret Intelligence Service, **SIS**, better known as **MI6**, and **GCHQ**. The latter is most associated with the Composite Signals Organisation (**CSO**) in Cheltenham but also has the National Cyber Security Centre (**NCSC**), located in London, as the UK's authority on cybersecurity. NCSC produced the Cyber Assessment Framework (**CAF**) largely based on the EU NIS (Network and Information Systems) directive, which was adopted as UK legislation **NIS**. Between 2023-2024 every water company has been subject to a **DWI** cyber resilience audit to verify each company's self-assessed CAF assessment.

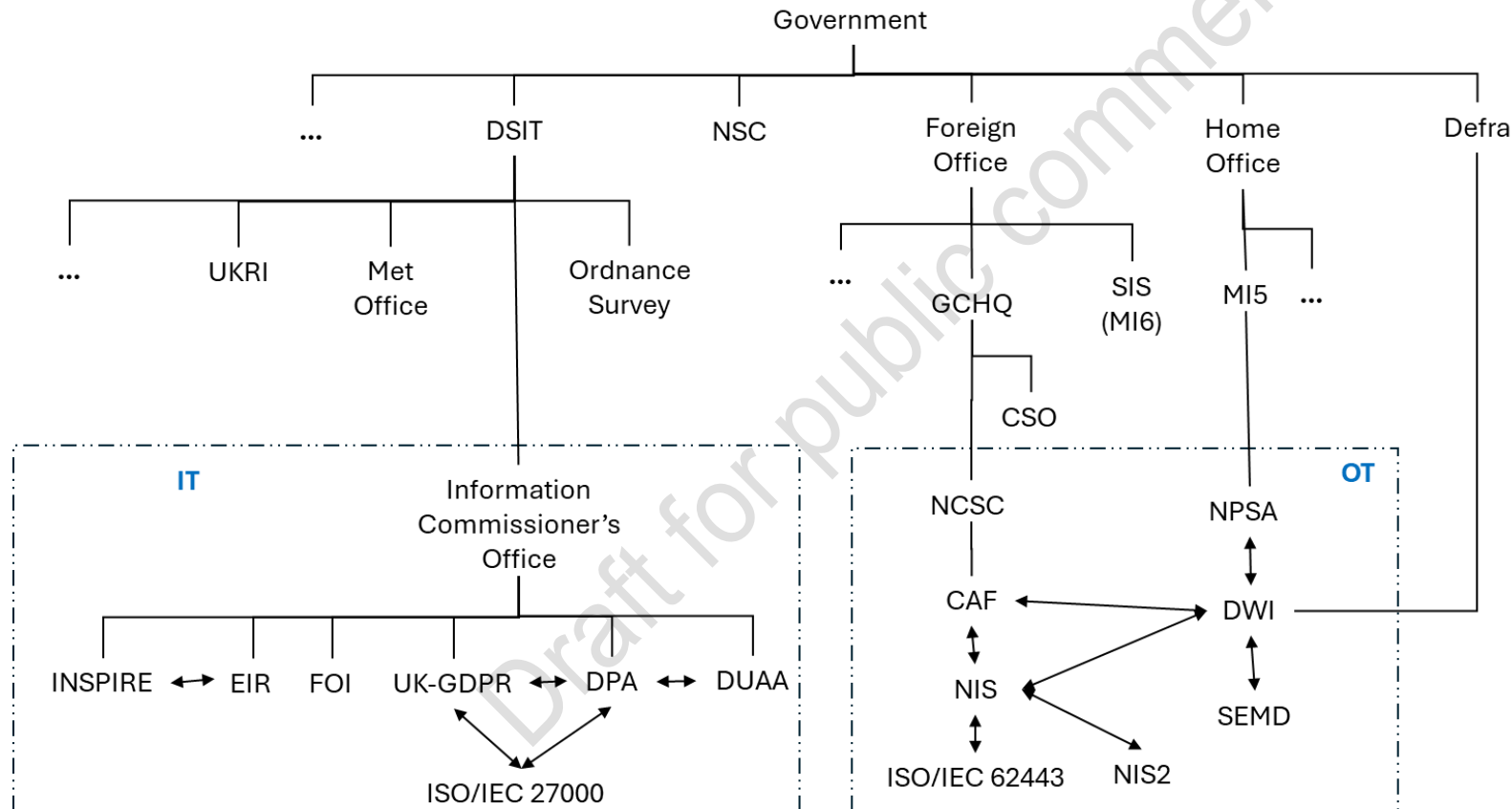
The EU has upgraded the original NIS legislation to **NIS2** and it covers wastewater in Europe. NIS2 does not directly apply in the UK but the principles have been adopted. A Cyber Security and Resilience Bill will be placed before parliament in late 2025.

Note: ISO/IEC 62443 [6] family of standards provide a detailed, technical framework for securing industrial automation and control systems and can be a key tool for achieving NIS2 compliance.

NPSA (National Protective Security Authority) is part of the Security Service (better known under its old name of **MI5**). NPSA is the national technical authority for physical and personnel protective

security, maintaining expertise in counter terrorism as well as state threats.

The Security and Emergency Measures Direction (**SEMD**) is issued under Section 208 of the Water Industry Act 1991. Undertakers and licensees are required to maintain a water supply and/or sewerage system in the interests of national security, or to mitigate the effects of any civil emergency which may occur. SEMD is regulated by DWI.



Note: for other Defra entities see Figure 10.

Figure 11 Regulation of IT/OT

3.9 Water Supply

3.9.1 Public Water Supply

Potable water in England is supplied to consumers through water company mains and communication pipes to the property boundary box. Supply pipes after the boundary are the responsibility of the consumer.

3.9.2 Water company supply

Water Company Assets, such as pipes, valves and meters are required to meet the requirements of the **Water Supply (Water Quality) Regulations**, in which **Reg.31** states that all materials and equipment that are used in water treatment and supply will not affect water quality. There are two routes for demonstrating this:

- Where it is considered that there is a large area in contact with the water and/or a long residence time, the product must be tested and approved under **Reg 31(4)(a)**. Depending on the material, this may involve rigorous and extended testing to verify that they won't leach harmful substances into the water supply. The approval scheme is operated by the DWI who also maintain the **Approved Products** list on their website.
- Small contact products (there is an exemplar list and a calculation formula on the DWI website) are deemed to satisfy **Reg 31(4)(b)** and do not require formal approval.

3.9.3 Contestable works

Self-lay mains contestability is where a developer can appoint an accredited, third-party **Self-Lay Provider (SLP)** to design and install new water mains and service connections for a development, rather than the water company doing it. The contestability of mains laying and connection is determined by the risk matrix in the **Ofwat Code for Adoption**, developed in conjunction with **Water UK** members. Water companies are mandated to have the code and **Local Practice** guidance for developers and SLPs.

SLPs must be accredited under the Water Industry Registration Scheme (**WIRS**), operated by LRQA (**Lloyd's Register**) on behalf of the water companies.

The Water Industry Registration Scheme - Accredited Entity (**WIRSAE**) allows WIRSAE registrants to tender for and to carry out water retailers' water supply disconnections and meter installation/replacement works.

A mandatory qualification for anyone, including water company employees, working on clean water sites or the clean water network is certification to the National Water Hygiene Scheme, administered by the Energy & Utility Skills Register (EUSR) and widely known as the **"Blue Card"**

3.9.3 Consumer pipework

The **Water Supply (Water Fittings) Regulations** set out requirements for the design, materials, installation, and maintenance of plumbing systems, water fittings, and appliances to prevent contamination, waste, and misuse of drinking water.

In 2021 the Water Regulations Advisory Scheme became **Water Regs UK**. Water Regs administers WaterSafe, a register for installers and, on behalf of some water companies, the Water Industry Approved Plumber Scheme (**WIAPS**). WaterSafe also works with plumbing organisations; **APHC**, **CIPHE** and **SNIPF**.

Certification of plumbing products to **Regulation 4** can be done by **WRAS** (Water Regulation Approvals Scheme, a subsidiary of Water Regs) or test and certification by **BSI** (Kitemark), **NSF** or **KIWA**

3.9.4 Private water supplies

Water supply for human consumption that isn't provided by a licensed water company, falls under the **Private Water Supplies (England) Regulations**. This places a legal obligation on the supplier that it must be 'wholesome' and not pose a health risk.

The **Local Authority** regulates private supplies, carries out risk assessments and water quality monitoring.

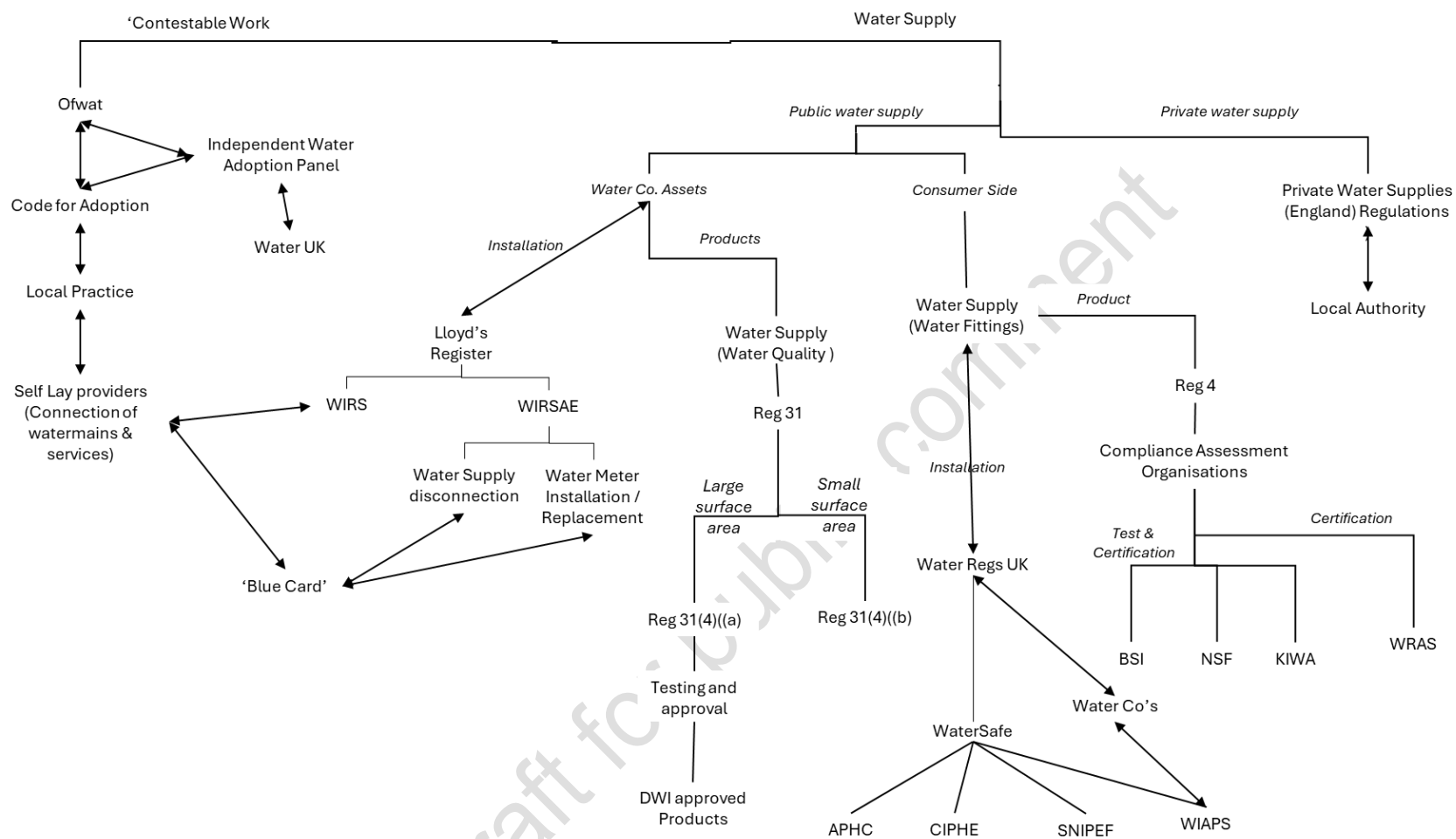


Figure 12 Water supply

4 Other Industry Specifications

4.1 CESWI

The Civil Engineering Specification for the Water Industry, currently in its 8th edition, provides a standard for civil engineering contracts awarded by Water Undertakers and Sewerage Undertakers in the UK. It is available in digital or print format from WRC.

4.2 WIMES

Water Industry Mechanical & Electrical Specifications provide water companies with specifications that will enable them to procure M & E equipment which is fit for purpose and provides the lowest Life Cycle Costs (LCC).

There are over 90 WIMES ranging from relatively simple machinery items, such as pumps and motors, to complicated pieces of package plant such as odour control equipment, protective coatings and mechanical and electrical installation of equipment.

A full list of the WIMES and their associated resources can be found on the Pump Centre website

4.3 Water UK

4.3.1 Water Industry Specification

Where European and national standards are not available, for example for newly developed products, a series of tailor-made specifications (WIS) is produced by the Water Industry. WISs are available on the Water UK Standards Board website.

4.3.2 Industry Guidance Note

In addition to the need for technical specifications covering performance, testing and quality control procedures, there are occasions when the water industry as a whole wishes to provide guidance to the individual water and sewerage suppliers and their suppliers. Information and Guidance Notes (IGN) have been developed for this purpose. An IGN can complement a WIS, BS or EN but must not conflict with any of them.

4.4 Drains and sewers

4.4.1 Sewerage Sector Guidance

Managed by Water UK, this is the Ofwat Code for Adoption relevant to sewers. In particular, the previous Sewers for Adoption has now been effectively incorporated into Appendix C Design

and Construction Guidance for foul and surface water sewers.

4.4.2 DMRB Series 500 and MCHW Series 0500

National Highways Design Manual for Roads and Bridges specifies design requirements for highways and the Manual of Contract Documents for Highway Works is the standard suite of specification documents which are included within a highway construction contract.

Series 500 covers Drainage and Service Ducts in each case.

Note: MCHW is currently being revised and formatting will be changed/digitised.

4.5 WRC Guides

The Manual of Drain and Sewer Cleaning is a best practice guidance document covering both blockage clearance and planned sewer cleaning. It supersedes the Sewer Jetting Code of Practice.

The Manual of Sewer Condition Classification is used by the UK water industry and other organisations to classify defects in sewers.

The Drain Repair Book is the definitive guide to the repair of private drainage systems Inspection and condition assessment of drains including a specification for drain repairs

APPENDIX A: Entities within Government departments

A.1 Public entity categories

In Figure 10, various 'levels' within government departments are shown and briefly described. The following is a decision tree (adapted from Executive Agencies: A Guide for Departments. Published by the Cabinet Office) to determine the category of a public entity

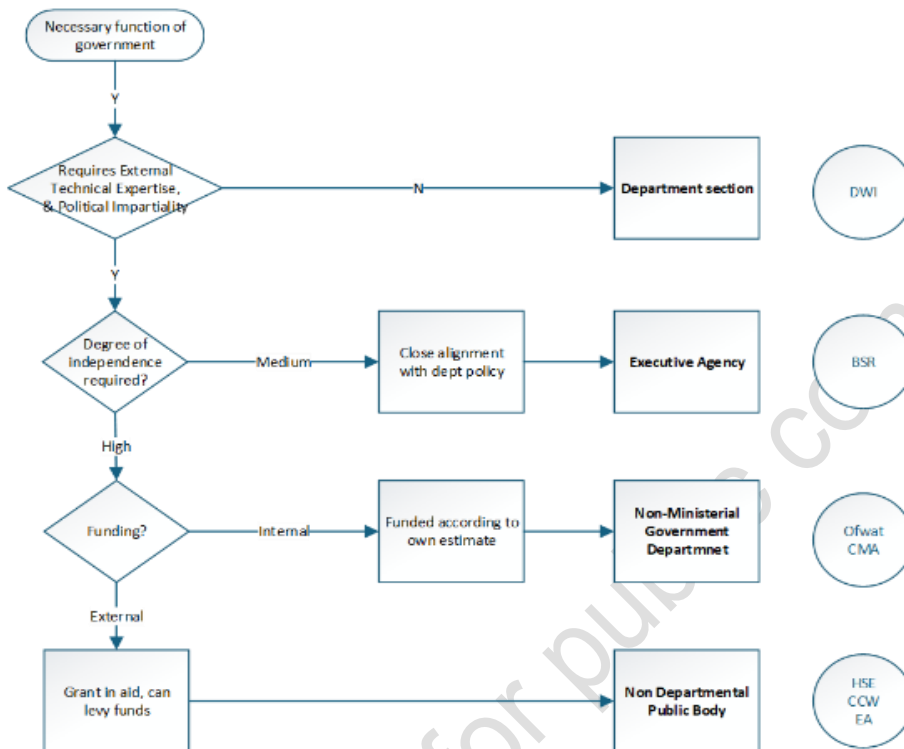


Figure A.1 Determination of public entity category

A.2 Government Departments and Ministries

Government Departments and Ministries are central to the functioning of the UK state. They are responsible for Policy Development; Legislation and Regulation (Drafting laws and ensuring compliance); Public Service delivery; supervising agencies and regulators.

The difference between Departments and Ministries is purely nomenclature, with Ministries being the more traditional term, used in areas like defence, justice, and housing, and Department preferred in newer or restructured bodies. Both are headed by a Secretary of State, who will be a Cabinet Minister.

There are currently 24 ministerial departments, but this number can change as new departments

are created, changed or merged according to prevailing government policy.

As an example, Dept. of Science Innovation & Technology (**DSIT**) was formed in 2023 when Dept. for Business, Energy, and Industrial Strategy (BEIS) was split into DSIT, Dept. for Energy Security and Net Zero, and Dept. for Business and Trade (the latter also taking on the functions of the previous Dept. for International Trade).

Sometimes, the department stays the same and just the name that changes, e.g. in 2023 **MCHLG** reverted to its previous (2018) name after a spell (from 2021) as Dept. for Levelling Up, Housing and Communities. The 2018 MCHLG was in itself a name change from the previous Dept. for Communities and Local Government.

A.3 Department Section

Within each department, the necessary functions, such as Policy, HR, Communications will be undertaken by Sections. In addition, there may be additional functions that are required that can be undertaken within the department.

As an example, **DWI** is a **specialist regulatory unit** within Defra because it aligns with Defra's environmental responsibilities; benefits from shared departmental infrastructure and

maintains independence in technical decisions while being politically accountable.

A.4 Executive Agency

Executive Agencies were established following a recommendation made in 1988 to allow the delivery of executive functions of government to be carried out separately from – but within a policy and resources framework set by – a primarily policy-focused department. They are headed by Chief Executives accountable to the minister.

Executive agencies are used where specialist skills or knowledge are required on an ongoing basis. Examples include the **Building Safety Regulator**, DVLA (Dept for Transport), Met Office (DSIT), and The Planning Inspectorate (MCHLG).

A.5 Non Ministerial Government Departments

NMGDs are a type of department of the United Kingdom government that deal with matters for which direct political oversight has been judged unnecessary or inappropriate. They are typically headed by senior civil servants or commissioners. Many fulfil a regulatory or inspection function, and their status is therefore intended to protect them from political interference.

They are accountable directly to Parliament or through a sponsoring department.

Our examples in Figure 10 and 3.7.3 are **Ofwat** the Water Services Regulation Authority which is the economic regulator of the water and sewerage industry, and the Competition and Markets Authority (**CMA**) which is responsible for, amongst other things, investigating possible anti-competitive agreements under the Competition Act 1998.

Other examples of NMGDs are HMRC, Ofsted, and the Charity Commission.

A.6 Non Departmental Public Bodies

NDPBs are public sector organisations that have a role in the process of national government but are not part of a government department. NDPBs carry out their work largely independently from ministers but are accountable to ministers, who in turn are accountable to Parliament for their effectiveness.

They are often referred to as "arm's length bodies" because they are not directly controlled by ministers.

Examples in Figure 10 and 3.7.4 are HSE, CCW, EA and Natural England.

	Department section	Executive Agency	NMGD	NDPB
Ministerial Oversight	Yes, direct	Yes, accountable to ministers	No direct minister; led by senior officials	No direct minister; sponsored by a department
Functions	Administration	Service delivery	Regulatory, oversight, adjudicatory	Advisory, regulatory, or executive
Operational Independence	None	Moderate	High	High
Accountability	To Minister	To parent department and ministers	Directly to Parliament or via sponsor	To sponsor department and Parliament
Funding	Ministerial budget	Department funded	Separate budget funding	Accepts Grant in aid, can levy funds
Examples	DWI	BSR , DVLA, HM Passport Office,	Ofwat , HMRC, Ofsted, ONS	HSE , CCW , Environment Agency

Table A.1 Comparison of UK Public Sector Bodies

4. BIBLIOGRAPHY

This document makes reference to the latest edition of the following publications (except where otherwise indicated) including all addenda and revisions.

- [1] ISO 1087: 2019 Terminology work and terminology science. Vocabulary
- [2] ISO 24513:2019 Service activities relating to drinking water supply, wastewater and stormwater systems. Vocabulary; Annex B Concept relationships and their graphical representation
- [3] BS EN 1990 Eurocode. Basis of structural and geotechnical design

BS EN ISO 9001 Quality management systems - Requirements

BS EN ISO/IEC 25059 Software engineering. Systems and software Quality Requirements and Evaluation (SQuaRE). Quality model for AI systems

BS ISO 4997 Cold-reduced carbon steel sheet of structural quality

BS ISO/IEC 18026 Information technology. Spatial reference model (SRM)

BS 9295 Guide to the structural design of buried pipes

PD ISO/TS 24399 Thermoplastic pipes for the conveyance of fluids. Inspection of polyethylene butt fusion joints using time of flight diffraction testing

PD CEN/TS 17152-4 Plastics piping systems for non-pressure underground conveyance and storage of non-potable water - Boxes used for infiltration, attenuation and storage systems. Guidance for structural design of modular systems

PD CEN/TR 18160 Plastics recycling. Classification of plastic recyclates as post-consumer recyclates (PCR) and post-industrial recyclates

PAS 2080 Carbon management in buildings and infrastructure

BSI Flex 2072 v2.0:2025 Battery electric and hydrogen-fuelled heavy-duty vehicles.
- Workshops and protocols for maintenance and inspection. Specification
- [4] BS 0 A standard for standards. Principles of standardization
- [5] ISO/IEC 27000:2020 Information technology. Security techniques. Information security management systems. Overview and vocabulary
- [6] ISO/IEC 62443 Security for industrial automation and control systems. (various parts)