



WATER SUPPLY (WATER FITTINGS) REGULATIONS (BYELAWS IN SCOTLAND)
WC REQUIREMENTS

REGULATION 4 (1) COMPLIANCE

The purpose of this document is to provide clarification of the requirements of regulation 4(1) of the Water Supply (Water Fittings) Regulations (Byelaws in Scotland) as they apply to WC suites.

As it is a harmonised standard all WC suites supplied in the UK are legally required to conform to the applicable essential characteristics identified in EN 997.

In recognition that UK national requirements differed to those elsewhere in Europe, when it was harmonised EN 997 included two classes or types, with very different requirements. Only the essential characteristics specified under Type 2 satisfy UK requirements¹.

EN 997 only applies to close-coupled suites, one-piece and independent WC pans² with integral trap used for personal hygiene manufactured from glazed ceramics or stainless steel. It does not cover squatting toilets, WC pans without integral trap or flushing cisterns as separate appliances.

Whilst conformity with a Regulators' Specification may meet the requirements of the Water Supply (Water Fittings) Regulations (Byelaws in Scotland) it does not satisfy UK national requirements under the Construction Products Regulations 2013.

As some product approval schemes grant approval/certification on the basis of compliance with the Regulators' Specification for fittings it is important to verify whether, in the case of WC suites, the scheme's acceptance criteria requires verification a WC suite is CE marked against EN 997 Type 2. If it does not conform with EN 997 Type 2 will need to be verified separately.

Regulation 4 (1)(a) compliance: WC suites

- WC suites CE marked against EN 997: Type 2 satisfies the requirements of regulation 4(1)(a) i.e. the WC suite is of a suitable quality and standard.
- EN 997 Type 2 does not include testing to confirm the adequacy of the backflow protection provided either by the inlet valve or the WC suite itself, this has to be demonstrated separately (please see regulation 4(1)(b) requirements below).

¹ As they do not satisfy UK requirements WC suites CE marked against EN 997 Type 1 will be rejected.

² Pans used as components in low and high level WC suites can be CE marked against EN 997 Type 2 when tested with the cistern(s) they are intended to be supplied with.

Regulation 4 (1)(b) compliance: WC suites

To be considered as being suitable for the circumstances in which it is used:

- **Schedule 2 paragraph 25**

The requirements of EN 997 Type 2 satisfy the design requirements for WCs set out in schedule 2 for:

- Different flush volumes
- A warning pipe
- An indelible line showing flush volumes

- **Non-metallic materials:**

A WC suite must conform to all the essential characteristics identified in EN 997 Type 2.

This includes a requirement (durability clause 6.16) that any non-metallic materials used in the construction of WC inlet valves be BS 6920 compliant, or equivalent, to the point of discharge. Although water in a WC cistern is itself not required to be wholesome, this requirement applies because mains supplied water is required to remain wholesome to the point at which it is discharged into a WC cistern.

- **Backflow protection:**

If a WC suite does not incorporate a compliant Type AUK1 air gap an alternative form of system backflow protection will be required.

Whilst EN 997 Type 2 includes a 'backflow' test it is undertaken on the inlet valve in isolation i.e. not installed in the cistern. Because this testing does not assess backflow once installed, it is not considered to be as rigorous and stringent as other testing undertaken to confirm air gap arrangements. There are therefore technical grounds for challenging conformity with this performance specification as being sufficient to demonstrate the adequacy of the backflow protection arrangements. Consequently the adequacy of point of use backflow protection has to be demonstrated separately.

Only in the case of WC suites it is acceptable for manufacturers to self-declare the inlet valve overflow arrangement can achieve a Type AG air gap and conformity with all the dimensional requirements for a Type AUK1 air gap arrangement. Please note the manufacturer shall always retain responsibility for the conformity of the product with its declared performance(s).

For further information please refer to the Type AUK1 and Type AG air gap requirements checklist.

ACCEPTABLE EVIDENCE OF COMPLIANCE

Summary: CE Marking against EN 997 Type 2

- BS EN 997 falls under the scope of Construction Product Regulations 2013, which is one of the routes identified in regulation 4(2). CE marking against EN 997 type 2 demonstrates that a WC suite satisfies all UK requirements relating to the ‘quality and standard’ of WC suites.
- CE marking against EN 997 Type 2 only, is acceptable evidence a close coupled and one piece WC suite complies with regulation 4(1)(a) only i.e. is of a suitable quality and standard.
- Pans used as components in low and high level WC suites can also be CE marked against EN 997 Type 2 when tested with the cistern(s) they are intended to be supplied with. The only place to list information about the pan cistern combination is in the list of product numbers attached to the declaration of performance.
- EN 997 Type 2 includes seven essential characteristics; to comply with Water Supply (Water Fittings) Regulations (Byelaws in Scotland) a WC suite must satisfy all of these. Confirmation of conformity is given in a declaration of performance (DoP).
- To be acceptable a declaration of performance (DoP) must include information about; the suite, intended use (personal hygiene), manufacturer, system of attestation (EN 997 uses the level 4 system of attestation³), harmonised standard (EN 997) and performance for all seven essential requirements, an example is provided below.
- One essential characteristic ‘durability’ requires non-metallic components in the inlet valve to be BS 6920 compliant to the point of discharge.
- CE marking against EN 997 Type 2 does not provide acceptable evidence of the backflow protection provided either by the inlet valve or the WC suite itself. Consequently the adequacy of any point of use backflow protection has to be demonstrated separately.
- It is acceptable for manufacturers to self-certify conformity with EN 997 Type 2. To be acceptable a declaration of performance must include a declared performance for the essential characteristics listed above.

Essential characteristics for EN 997 Type 2 products		
CL 2 –Z: Type 2 product with flush volume ≤ 6 l and optionally minimum flush volume as Z		
	Essential characteristics	Type 2 requirement clauses in EN 997
WL	Water /leak tightness	6.7 6.8
CF	Capacity of flushing water	6.3 6.4 6.5 6.8
BP	Backflow prevention (foul air)	6.2 6.13
VR	Valve reliability	6.7
CA	Clean ability	6.9 6.10 6.11 6.12
LR	Load Resistance	6.14
DA	Durability	6.16

³ Level 4 attestation – the declaration of performance (DoP) can be drawn up by the manufacturer with no need for the involvement of a notified body on the basis of type testing and factory control i.e. conformity is self-declared.

Example for illustration purposes only

DECLARATION OF PERFORMANCE

No. CGH469

1. Name registered trade name or registered trade mark and contact address of the manufacturer

Manufacturer's name
Company name
Address

2. Product type

Close coupled WC suite

3. Unique identification code of the product type

For product number(s) see list attached.

4. Intended use

Personal hygiene

5. System of assessment and verification of consistency of performance (AVCP)

System 4

6. Harmonised standard

EN 997: 2012/AC:2012

7. Declared of performance

Essential characteristics	Performance	Harmonised technical specification
Capacity of flushing water (CF)	PASS	EN 997:2012/AC:2012
Backflow prevention (of foul air) (BF)	PASS	
Cleanability (CA)	PASS	
Load resistance (LR)	PASS	
Water tightness/leak tightness (WL)	PASS	
Valve reliability (VR)	PASS	
Durability (DA)	PASS	

8. The performance of the product identified is in conformity with the declared performances.

This declaration of performance is issued, in accordance with regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified in point 1 above.

Signed for and on behalf of the manufacturer by:

(Name and function)

At (place and date of issue)

(Signature)

Check list: CE marking against EN 997 Type 2

1. Declaration of performance

Essential characteristics	Performance	Harmonised technical specification
Capacity of flushing water (CF)	PASS	EN 997: 2012/AC:2012
Backflow prevention (of foul air) (BF)	PASS	
Cleanability (CA)	PASS	
Load resistance (LR)	PASS	
Water tightness/leak tightness (WL)	PASS	
Valve reliability (VR)	PASS	
Durability (DA)	PASS	

Has an acceptable declaration of performance reporting conformity with EN 997 Type 2 for the WC suite been provided? An example is provided above.

It is important to review the declaration of performance (DoP) for low/high level suites CE mark against EN 997 Type 2 to ensure the combination to be installed has been tested.

If it does not provides sufficient information about an essential characteristic, including 'no performance declared', as conformity with all seven essential requirements is needed to confirm compliance (a statutory duty) there are grounds to request further information.

2. Backflow protection

If the manufacturer is claiming the WC suite incorporates a Type AUK1 air gap, has an acceptable declaration of conformity been provided? If not the WC suite will need to be supplied via an alternative form of system backflow protection providing fluid category 5 protection.

Where a WC suite incorporates a compliant Type AUK1 air gap (refer to Type AUK1 air gap requirements for WCs checklist for further details) it is acceptable for a manufacturer to self-declare the WC inlet valve overflow arrangement provide a Type AG air gap and conformity with all the dimensional requirements of a Type AUK1 air gap. **Please note** the manufacturer shall always retain responsibility for the conformity of the product with its declared performance(s).

Type AG air gap:

- A non-mechanical backflow prevention arrangement providing an unobstructed visible air gap between the lowest point of discharge and critical water level.

Dimensional requirements AUK1 air gap:

- There is a unobstructed, visible air gap of not less than 2D or 20mm whichever is the greater between the lowest level point of discharge and the critical water level (CWL);
- There is at least 15mm between spillover level of the WC pan (receiving vessel category 5) and the lowest internal level of the WC cistern (interposed cistern category 3);
- There is at least 300mm between the spillover level of the WC (receiving vessel) and the invert of the warning pipe; and
- The circular overflow has a minimum dimension of 19mm.