

Summary of Key Changes
Sewers for Scotland 2nd edition (2007) to Sewers for Scotland 3rd edition (2015)

SfS2 Clause	Change Description from SfS2	SfS3 Clause	Change Detail in new SfS3
Feedback Arrangements	Technical feedback via WRc by telephone	N/A	Technical Feedback on document via Asset Management Standards email
Obtaining further copies of document	Vua WRc	N/A	Available as electronic download via Scottish Water
		N/A	New 'Record of Changes and Amendments' added
FORWARD		N/A	General update referencing status as 'specification, focus on water quality and public health compliance.,
Glossary	Updated and moved to Appendices	Appendix XI	updated glossary
Part 1 - General			
1.1. 1 to 6	6 clauses outlining the application of the document	1.1. 1 to 3	Previous clauses reduced into 1 & 2 and a new clause 3 added reflecting SW position regarding standard products
1.2.3	Operational Code description	1.2.4	Clause reference added to paragraph and subsequent clauses renumbered
1.3. 4 to 16	General information regarding SUDS	2.1. 1 to 9	Clauses moved to section 2A and clauses reworded and renumbered
1.3.17 to 43	General information regarding SUDS	1.3	New sections created - Liaison in planning, Agreements, Construction, Guarantee Period and Vesting
Table 1	Aid to Making a Sewer Takeover Technical Submission	Removed	Removed
Figure 1	The Stages in Taking Over New Sewerage Assets	Removed	Removed
Part 2 - Design			
Section 2A - Design Submissions			
2.1 to 8	Clauses moved to section 2.2 and reworded	2.2.1 to 8	1. Vesting Agreement and Waiver process referenced 2. Waivers process referenced Note Added regarding continuity of ownership of surface water system 5. Planting guarantee period of SUDs extended to 2 years 6. Reference to SEPA document (WAT-RM08) 6. Additional info concerning multiple detention/treatment arrangements 7. Confirmation of SW operation and maintenance from vesting of Sewers
2.3.1 to 6	Various clauses reworded	2.7	Note: Other types of non vested solutions for surface water management referenced 6. SUDs systems to comply with the Water Environment (Controlled Activities) (Scotland) Regulations 2011 7. Approval to connect to combined system will require approval of SW asset planner
2.4.1 to 6	Various clauses reworded	2.3	3.All development drainage shall be separated up to the point of connection 4. Developers to agree with SEPA, LA and SW the appropriate integrated surface water drainage system 6. Ownership and extent of responsibilities shall be clearly defined in the vesting agreement
Section 2B - Surface Water Drainage Design			
2.6.11 to 14	Various clauses renumbered and reworded	2.6	1. 1 in 200 year overall min flood resilience referenced and all design storms shall include climate change and additional paved areas 8. Checks shall be made on the 1 in 200 return period plus climate change and additional paved area allowances to ensure against flooding
2.6.15 to 17	Various clauses renumbered and reworded	2.7.1	4. Models shall demonstrate flood routing in a 1in200 year event
2.7	Various clauses renumbered and reworded	2.8	1. CIRIA document referenced 3. SEPA liaison required for sampling, discharge measurement and licensing
		2.8.4	High risk development that require simple licence from SEPA (i.e. <1000 houses/car park spaces, industrial estates, motorway/major road) shall be kept separate from SUDS systems serving low risk developments authorised by GBR 10.
2.8.5 to 7	Various clauses renumbered and reworded	2.9.2	3. maintenance equipment for sedimentation forebay will generally be a mechanical excavator with bucket arrangement adequate to remove build up of sedimentation material.
2.8.13 to 17	Various clauses renumbered and reworded	2.9.4	3. Inverts of all incoming sewers to be above 1 year water level, making due allowance for climate change and allowance for increased paved areas
2.8.24 to 31	Various clauses renumbered and reworded	2.9.6	2. flood routing shall be assessed for 1-200 year event to ensure integrity of the SUDS arrangements Note: Reference made to SW " Delivering Flood Risk Management guidance"
2.8.32 to 35	Various clauses renumbered and reworded	2.9.7	1. Pond volume subject to agreement with SEPA 2. Membrane thickness of at least 0.75mm, underlaid by 50mm of sand and polythene liner described.
2.8.36 to 38	Various clauses renumbered and reworded	2.9.8	1. Access route to be a maximum 30 year water level and include allowance for climate change and increased paved areas 4. Maintenance of access tracks etc shall be managed as detailed in the vesting agreement 5. Adjacent land should not convey surface water runoff onto the maintenance track 6. Provision of tanker access to allow emptying in event of severe pollution
2.8.39 to 47	Various clauses renumbered and reworded	2.9.9	Note added - regarding max 1:12 slope gradient on the defined maintenance access route into the pond. 4. Barrier fencing shall be considered as part of the initial risk assessment 5. Design risk assessment should take into consideration SUD system
2.8.48 to 49	Various clauses renumbered and reworded	2.9.10	1. Maintenance of access tracks fencing etc. shall be detailed in the vesting agreement
2.9.1 to 5	Various clauses renumbered and reworded	2.10.1	3 Low-flow channel element added to detention basin elements

2.9.6	Various clauses renumbered and reworded	2.10.2	1. Volume of detention basins lowered 10000m3
		2.10.1.3	Reference to Fig.5 for low-flow channel requirements.
2.9.20 to 22	Various clauses renumbered and reworded	2.10.6	4. Developer shall make a declaration to SW that SUD system has fully addressed any risk of ground water pollution
2.10.1 to 6	Various clauses renumbered and reworded	2.11.1	1. Principle feature of SUDs system is the creation of green spaces and the encouragement of biodiversity 3. Design criteria for adoptable underground storage
2.12.1 to 3	Various clauses renumbered and reworded	2.13	1. Reference to Vesting agreement 2. Source controls shall mimic greenfield run off rates
Fig 2 - 9	SUDS ponds and Basins details	Fig 1 - 9	Fig 5 - low flow channel added to basin layout with Note:- Localised grass depression to ensure basin dries out
		Fig.9	Note - Where site layout permits, the Outfall arrangements should be positioned 45degrees to the direction of flow
		Fig 6	Note added - Basin liners are only to be used in areas of high groundwater
Section 2C - Sewerage Design			
2.13	Section 2C - Layout of Sewers and Manholes	2.14.10	List of landscaping shrubbery added
2.17.1	Design of Manholes	2.18.1	Alternative MH construction using precast bases approved for use
2.17.2	Manhole diameters	2.18.2	Pipe Dia's adjusted on Table 2 Manhole Diameters to allow use of 1350Dia MH's
2.17.9	Safety Chains	2.18.7	Dia of Pipes requiring safety chains at MH's increased to 600mm or greater
2.19.2	Dia of twin walled structured pipes	2.20.2	Structured walled plastic pipes increased to max dia of 450mm for adoptable sewers
Fig 10 - 19	MH Details etc.	Fig 10 - 20	Fig 10 & 11 Typical layouts - New details Fig 12 & 13 Permitted Location of Sewers - New Details Fig 14 & 15 Manhole Detail - Re-drawn Fig 16 & 17 Manhole Detail Alternative - New Detail Fig 18 Manhole Detail - Re-drawn Fig 19 - Typical MH Arrangement - New Detail Fig 20 - Backdrop - Re-drawn
Section 2D - Pumping Station Design (New for Sfs3)			
Section 2C clause 2.22	General Design of Pumping Stations	Section 2D	Section added 2D - Pumping Station Design
		2.22.1	Scottish Water Standard Product Pumping Station and Fig 21 added
		2.22.3	Life Cycle Clause added
		2.22.4	Drainage Impact Assessment added
2.23	Layout of Pumping Stations	2.24	Provision of Pumping Stations
		2.24.1	Minimum distances - edge of wet well hard standing from property boundary added
Section 2 C clause 2.21	Hydraulic Design - Rising Mains	2.25	Provision of Pumping Mains
		2.25.3	Table 5 Max length of Pumping Main and Suitable Impeller Types added
		2.25.3	Pumping Mains can be laid at steeper gradients where local surface or sub surface features dictate with approval of SW
2.21.4	Hydraulic Design - Rising Mains	2.25.4	Septicity risk assessment procedure
Fig 17 - 22	Pumping Station layouts, wiring etc.	Fig 22 -28	Fig 22 & 23 - Typical PS Layout Type 1,2 & 3 - New Detail Fig 24 - DSEAR flow chart - Updated Fig 25 - Typical Wet Well - Re-drawn Fig 26 - Typical Control Panel - Re-drawn Fig 27 - Typical Kiosk Layout - Re-drawn Fig 28 - Typical Earthling - Re-drawn
		2.26.2	Blockage Risk Assessment
3.3.1	DSEAR Compliance	2.26.3	Hazardous Area Risk Assessment
2.25	Wet Well	2.26.4	Wet Well - prefabricated plastic and reinforced concrete options included
2.26	Valve Chamber	2.27	Valve Chamber Drainage duck bill valve added
		2.27.2	Ventilation of wet well
3.12	Kiosk	2.28	Design of Kiosk - separate DNO section required
Part 3 - Mechanical and Electrical Specification for Pumping Stations (New for Sfs3)			
Section 3A - Pump Specification			
3.31	DSEAR Compliance	3.1	Hazardous Area Appliances
3.3.5	Mounting Arrangements	3.3.5	Guide System - stainless steel tubes required
3.3.16	Davits and Davit Sockets	n/a	Davits and Davit Sockets are no longer required due to a change in lifting strategy
Section 3B - Motor Specification			
3.6	Introduction	3.5	BS/WIMES Spec references updated
3.7	Performance Requirements	3.6	Updated in line with new motor efficiency regulations
Section 3C - Electrical Specification			
3.10	Scope	3.9	SW Standard Product MCCs added for use where anti-blockage protection is required.
3.11	General	3.10	REC replaced by DNO
3.12	Kiosk	2.28	Updated in line with current SW Specification and relocated
3.12.7	Telemetry	2.28.4	Telemetry signals list updated in line with current SW Specification and relocated
3.13.1	Control Panel General	3.11.1	Renamed Electrical Assembly and the criteria for Form 1 and Form 4 control panels clarified

3.13.2	Type Testing	3.11.2	Replaced with Design Verification as per new BS EN 61439
3.13.3	Construction	3.11.3	Updated in line with current SW Specifications
3.13.4	Earthing & Bonding	3.11.4	Updated in line with current SW Specifications
3.13.5	Wiring	3.11.5	Updated in line with current SW Specifications
N/A		3.11.6	New section on indicator lamps & pushbuttons added
3.12.6	Connection for Standby Generator	3.11.7	Section relocated
N/A		3.11.8	New Section on ULC added
3.14	Functional Units	3.11.9	Functional Units for Form 4 assemblies clarified & updated
3.14	Functional Units	3.12	Functional Units for Form 1 assemblies clarified & updated
3.15	Electrical Installation	3.13	Updated in line with current SW/WIMES Specifications
N/A		3.13.9	New Section on Instrumentation added
Section 3D - Valve Specification			
No Change			
Part 4 - Civil Engineering Specification			
5.1.1	Drawings	5.1.1	2. Details shall be provided of the level and location of the temporary benchmarks and reference points which are proposed to be used.
5.1.7	BRITISH AND EUROPEAN STANDARDS AND OTHER DOCUMENTS	4.1.7	2. Submissions shall be made in accordance with the latest published Standard which is current on the date the submission is made.
5.2.3	Water	4.2.3	2. If water for the Works is not available from the public supply, approval shall be obtained regarding the source of supply and manner of its use.
5.2.4	Aggregates for Concrete	4.2.4	2. The water absorption of aggregates for concrete designed to retain an aqueous liquid shall not exceed 3% when measured in accordance with BS EN 1097-6. 3. The proportion of coarse recycled aggregate and coarse, recycled concrete aggregate shall not exceed 20% by mass of the total coarse aggregate in concrete. 4. Recycled aggregates and recycled concrete aggregates shall only be used in contact with raw or potable water where it has been demonstrated that they are suitable for this application.
5.2.7	Ground Granulated Blast furnace slag	Removed	
		4.2.9	Ready mixed Concrete - Clauses added
5.2.11	Cement Grouts - Clause 4 removed		
5.2.12	Mortar - Clause 4 removed		
5.2.19	Concrete Pipes and Fittings	4.2.19	3. Unreinforced and reinforced concrete jacking pipes shall comply with the relevant provisions of BS EN 1916 and BS 5911-1.
5.2.20	Ductile Iron Pipes and Fittings	4.2.20	2. Flanges for pipes and pipeline fittings shall comply with BS EN 1092-2 for ductile iron. 3. Factory-applied coatings shall be in accordance with BS ISO 8179-1. 4. Factory-applied and site-applied (tubular) polyethylene sleeving shall be in accordance with BS 6076. 5. Tubular polyethylene film for use as a loose protective sleeving for buried iron pipes and fittings shall comply with the relevant provisions of BS 6076 6. Bituminous coatings shall comply with BS 3416.
		4.2.24	GRP PIPES AND FITTINGS 1. The use of GRP pipes and fittings shall only be permitted by agreement of Scottish Water.
		4.2.25	1. Elastomeric joint seals shall be Type WC or WG, complying with the relevant provisions of BS EN 681-1, and shall be obtained from the pipe manufacturer. 2. Joint lubricants for sliding joints shall have no deleterious effect on either the joint rings or pipes, and shall be unaffected by sewage. 3. Seals shall be tested in accordance with BS 7874 4. In the case of composite seals, the requirements only apply to those components exposed to the contents of the pipeline or pipework.
Appendices			
Appendix I	Publications	Appendix I	A. Referenced document list updated B. Reference to SW Standards and Specifications added
Appendix II	British Standards and other Water Industry Specifications	Appendix II	References updated
Appendix III	Incorporated into Appendix II SfS3		
Appendix IV	Standard Drawing Symbols	Appendix III	No changes made
Appendix V	Parliamentary Acts and Regulations Referenced	Appendix IV	Updated
Appendix VI	Miscellaneous Publications	Removed	
Appendix VII	Restrictions to Tree Planting	Removed	
Appendix VIII	Model Forms of Agreement	Appendix V	No Changes made
Appendix IX	Guidance on Vesting	Removed	
Appendix X	Manhole Detail Card	Removed	
		Appendix VI	Guidance on Vesting of First time Discrete Sewerage Systems - New
Appendix XI	Greenfield Runoff Peak flows	Appendix VII	Updated
		Fig 31 & 32	Updated to reflect Scotland only
Appendix XII	Ponds and Basins Maintenance and Risk Assessments	Removed	
		Appendix VII	Responsibilities for managing flood Risk in Scotland - New
		Appendix IX	DSEAR preliminary Assessment Record - New
		Appendix X	Glossary of Terms - Updated and moved from beginning.

Note:

The general tone and feel of the document has been changed, i.e. should's have become shall's, so it reads as a Specification rather than guidance