Target Specification for Recycled Water to Meet Final Rinse Quality

The TSA first published a specification for recycled water in 2000. The Association's Technical and Standards Committee has now approved a revised specification.

Following the advances in chemistry and development in the recycling of laundry waste water, it was felt that the original TSA specification for recycled water published in October 2000 required updating to reflect the current requirements of the industry.

Whilst the first priority was to ensure that the quality of recycled water was sufficient to achieve excellent results for processing of white linen i.e. without detriment to quality of washing or long terms affects on the linen, the TSC's Water Working Party believed that certain aspects of the specification could be changed in line with more recent experience and practise.

The new specification and values provide the minimum achievable standard required for processing quality, and enable realistically achievable and cost effective recycling of laundry effluent from the technology available in today's market place.

The Water Working Party acknowledges that there may be some variance in water quality requirements for either less onerous or more demanding processes within the laundry business, but believe that the revised recycled water specification provides a good target specification for achieving laundry quality requirements.

Defintions:

Recycled:

Water which is treated, to remove suspended and dissolved substances arising from wash chemicals and soil from the textiles, restoring it to meet the new TSA specification allowing its use for rinsing purposes (usually of white work)

Recovered:

Water which is collected from rinsing steps and used again in the main wash. The water may be filtered to remove suspended solids

Reused:

As for recovered water

Target criteria for the quality of recycled water: Final rinse white work

Criterion	Maximum value or range	Comment	
Essential			
pH	6.5 – 8.0	No change	
Hardness (total Ca^{2+}/Mg^{2+})	30ppm	Water hardness is the key parameter in TDS; operating levels of around 1200ppm TDS can be tolerated providing total hardness is controlled.	
Turbidity	10 NTU	Measured on the degassed sample in **N**ephelometric **T**urbidity **U**nits; a comparative scale where drinking water often has a limit of 1 NTU and 5 NTU are detectable by eye.	'Appearance' test on samples taken during treatment. Low turbidity, no colour and no smell of 'bad eggs' provides a rough & ready assurance of adequate treatment. Bad odour would indicate the necessity to undertake bioburden testing and thorough cleaning.
Colour	No colour		
Iron	0.1ppm	German RAL 992/2 (laundering best practice)	
Manganese	0.03ppm	German RAL 992/2 (laundering best practice)	
Copper	0.05ppm	German RAL 992/2 (laundering best practice)	
Surfactant	10ppm	No change	
Bioburden (TVC)	No pathogens & ≤100 CFU/ml	Reference: Recommendations from the Dutch CERTEX scheme and German RAL 992/2	
Optional			
Total dissolved solids (TDS)	1,200ppm	Increased from 750ppm based on practical experience and compliance with guideline on water hardness.	
Alkalinity	250ppm	Not considered to have a particular influence provided pH restriction complied with. If galling arises it may be controlled by acid souring in the rinse.	
Silicate & polyacrylates	-	Arising from some washing products – possible front end problem for recycling systems using membranes - deposition as calcium salts causes blockage of fine filters & membranes	
Total organics	-	No reliable test method. Included previously as a possible indication of bioburden	