

DIN 19645:2006-04 (E)

Treatment of spent filter backwash water from systems for treatment of water of swimming pools and baths

| Contents | | Page |
|-----------------|---|-------------|
| Foreword | | 4 |
| 1 | Scope | 4 |
| 2 | Normative references | 4 |
| 3 | General | 6 |
| 4 | Terms and definitions | 7 |
| 5 | Wastewater composition and source | 10 |
| 6 | Treated backwash water requirements | 10 |
| 6.1 | Type 1 water | 10 |
| 6.2 | Type 2 water | 10 |
| 6.3 | Type 3 water | 11 |
| 7 | Design | 11 |
| 7.1 | General | 11 |
| 7.2 | Backwash wastewater tanks | 12 |
| 7.3 | Equipment rooms | 12 |
| 7.3.1 | General | 12 |
| 7.3.2 | Installation requirements | 12 |
| 7.4 | Treated water tanks | 13 |
| 8 | Waste disposal | 13 |
| 9 | Multiple barrier system | 13 |
| 10 | Performance of treatment stages | 14 |
| 10.1 | General | 14 |
| 10.2 | Preparation of type 1 water | 14 |
| 10.3 | Preparation of type 2 water | 15 |
| 10.4 | Preparation of type 3 water | 16 |
| 11 | Materials, components and instrumentation | 17 |
| 11.1 | General | 17 |
| 11.2 | Pipework | 17 |
| 11.3 | Pumps and valves | 18 |
| 11.3.1 | Pumps | 18 |
| 11.3.2 | Valves | 18 |
| 11.4 | Membrane materials | 18 |
| 11.5 | Instrumentation | 19 |
| 11.5.1 | Water meter | 19 |
| 11.5.2 | Differential pressure measurement | 19 |
| 11.5.3 | Conductivity measurement | 19 |
| 11.5.4 | Chlorine concentration monitoring | 19 |
| 11.5.5 | Emergency shutdown | 19 |
| 11.5.6 | Sampling | 19 |
| 12 | Operation and maintenance | 20 |

| | | |
|---|--|-----------|
| 12.1 | Ultra- and microfiltration system operation | 20 |
| 12.1.1 | Filtration | 20 |
| 12.1.2 | Filter re-conditioning by washing | 20 |
| 12.1.2.1 | General | 20 |
| 12.1.2.2 | Chemical-free washing | 20 |
| 12.1.2.3 | Washing using chemicals | 21 |
| 12.1.3 | Chemical cleaning | 21 |
| 12.2 | Nanofiltration and reverse osmosis system operation | 22 |
| 12.2.1 | Filtration | 22 |
| 12.2.2 | Cleaning | 22 |
| 12.2.2.1 | Chemical-free washing | 22 |
| 12.2.2.2 | Chemical cleaning | 22 |
| 12.3 | Monitoring and documentation | 22 |
| 12.4 | Maintenance | 23 |
| Annex A (informative) Treatment stages | | 24 |
| Bibliography | | 28 |