

# DIN EN 12566-3:2016-12 (E)

## Small wastewater treatment systems for up to 50 PT - Part 3: Packaged and/or site assembled domestic wastewater treatment plants

---

| <b>Contents</b>         |   | <b>Page</b> |
|-------------------------|---|-------------|
| European foreword ..... |   | 6           |
| <b>1</b>                | <b>Scope .....</b>  | <b>8</b>    |
| <b>2</b>                | <b>Normative references .....</b>   | <b>8</b>    |
| <b>3</b>                | <b>Terms, definitions, symbols and abbreviated terms .....</b>              | <b>9</b>    |
| <b>3.1</b>              | <b>Terms and definitions .....</b>  | <b>9</b>    |
| <b>3.2</b>              | <b>Symbols and abbreviated terms .....</b>                                  | <b>10</b>   |
| <b>4</b>                | <b>Product characteristics .....</b>  | <b>11</b>   |
| <b>4.1</b>              | <b>Design .....</b>   | <b>11</b>   |
| <b>4.1.1</b>            | <b>General .....</b>  | <b>11</b>   |
| <b>4.1.2</b>            | <b>Inlets, outlets, internal pipework and connections .....</b>             | <b>11</b>   |
| <b>4.1.3</b>            | <b>Access .....</b>   | <b>11</b>   |
| <b>4.1.4</b>            | <b>Sizing basis .....</b>   | <b>12</b>   |
| <b>4.1.5</b>            | <b>Overall dimensions .....</b>   | <b>12</b>   |
| <b>4.2</b>              | <b>Load bearing capacity .....</b>  | <b>12</b>   |
| <b>4.3</b>              | <b>Treatment efficiency .....</b>   | <b>13</b>   |
| <b>4.4</b>              | <b>Watertightness .....</b>   | <b>13</b>   |
| <b>4.4.1</b>            | <b>General .....</b>  | <b>13</b>   |
| <b>4.4.2</b>            | <b>Water test .....</b>   | <b>13</b>   |
| <b>4.4.3</b>            | <b>Vacuum test .....</b>  | <b>13</b>   |
| <b>4.4.4</b>            | <b>Pneumatic pressure test .....</b>  | <b>13</b>   |
| <b>4.5</b>              | <b>Durability .....</b>   | <b>14</b>   |
| <b>4.5.1</b>            | <b>General .....</b>  | <b>14</b>   |
| <b>4.5.2</b>            | <b>Concrete .....</b>   | <b>14</b>   |
| <b>4.5.3</b>            | <b>Steel .....</b>  | <b>14</b>   |
| <b>4.5.4</b>            | <b>Unplasticized polyvinyl chloride (PVC-U) .....</b>                       | <b>14</b>   |
| <b>4.5.5</b>            | <b>Polyethylene (PE) .....</b>  | <b>14</b>   |
| <b>4.5.6</b>            | <b>Glass reinforced plastic (GRP) .....</b>                                 | <b>15</b>   |
| <b>4.5.7</b>            | <b>Polypropylene (PP) .....</b>   | <b>16</b>   |
| <b>4.5.8</b>            | <b>PDCPD .....</b>  | <b>16</b>   |
| <b>4.5.9</b>            | <b>Flexible sheets .....</b>  | <b>17</b>   |
| <b>4.6</b>              | <b>Reaction to fire .....</b>   | <b>17</b>   |
| <b>4.6.1</b>            | <b>General .....</b>  | <b>17</b>   |
| <b>4.6.2</b>            | <b>Plants classified as Class A1 without the need for testing .....</b>     | <b>17</b>   |
| <b>4.6.3</b>            | <b>Plants classified according to the test results .....</b>                | <b>18</b>   |
| <b>4.7</b>              | <b>Power consumption .....</b>  | <b>18</b>   |
| <b>4.8</b>              | <b>Dangerous substances .....</b>   | <b>18</b>   |
| <b>5</b>                | <b>Testing, assessment and sampling methods .....</b>                       | <b>19</b>   |
| <b>5.1</b>              | <b>Load bearing capacity .....</b>  | <b>19</b>   |
| <b>5.1.1</b>            | <b>Generals .....</b>   | <b>19</b>   |
| <b>5.1.2</b>            | <b>Load bearing capacity determined by calculation .....</b>                | <b>19</b>   |
| <b>5.1.3</b>            | <b>Load bearing capacity determined by testing .....</b>                    | <b>20</b>   |
| <b>5.2</b>              | <b>Treatment efficiency .....</b>   | <b>22</b>   |
| <b>5.3</b>              | <b>Watertightness .....</b>   | <b>23</b>   |
| <b>6</b>                | <b>Assessment and verification of constancy of performance - AVCP .....</b> | <b>23</b>   |
| <b>6.1</b>              | <b>General .....</b>  | <b>23</b>   |

|   |  |    |
|---|--|----|
| 6.2   | Type testing .....   | 23 |
| 6.2.1   | General .....  | 23 |
| 6.2.2   | Test samples, testing and compliance criteria .....  | 24 |
| 6.2.3   | Test reports .....   | 26 |
| 6.2.4   | Shared other party results .....   | 26 |
| 6.2.5   | Cascading determination of the product type results .....  | 26 |
| 6.3   | Factory production control .....   | 27 |
| 6.3.1   | General .....  | 27 |
| 6.3.2   | Requirements .....   | 28 |
| 6.3.3   | Product specific requirements .....  | 31 |
| 6.3.4   | Initial inspection of factory and of FPC .....   | 31 |
| 6.3.5   | Continuous surveillance of FPC .....   | 32 |
| 6.3.6   | Procedure for modifications .....  | 32 |
| 6.3.7   | One-off products, pre-production products (e.g. prototypes) and products produced in very low quantity ..... | 32 |
| 7   | Classification and designation (Nominal designation) .....   | 33 |
| 8   | Marking, labelling and packaging .....   | 33 |
| 8.1   | Marking .....  | 33 |
| 8.2   | Installation instructions .....  | 33 |
| 8.3   | Operation and maintenance instructions .....   | 34 |
| Annex A (normative) Watertightness test .....                   |  | 35 |
| A.1   | Selection of test .....  | 35 |
| A.2   | Water test .....   | 35 |
| A.2.1   | Sample .....   | 35 |
| A.2.2   | Procedure .....  | 35 |
| A.2.3   | Expression of results .....  | 36 |
| A.3   | Air permeability vacuum test .....   | 36 |
| A.3.1   | Sample .....   | 36 |
| A.3.2   | Procedure .....  | 36 |
| A.3.3   | Expression of results .....  | 36 |
| A.4   | Pneumatic pressure test .....  | 37 |
| A.4.1   | Sample .....   | 37 |
| A.4.2   | Procedure .....  | 37 |
| A.4.3   | Expression of results .....  | 37 |
| Annex B (normative) Treatment efficiency test procedure .....   |  | 38 |
| B.1   | Responsibility and testing location .....  | 38 |
| B.2   | Plant selection and preliminary evaluation .....   | 38 |
| B.2.1   | General .....  | 38 |
| B.2.2   | Installation and commissioning .....   | 38 |
| B.2.3   | Operation and maintenance procedures during testing .....  | 38 |
| B.2.4   | Data to be monitored .....   | 38 |
| B.3   | Test procedure .....   | 39 |
| B.3.1   | Time for establishment .....   | 39 |
| B.3.2   | Influent characteristics .....   | 39 |
| B.3.3   | Daily flow pattern for testing .....   | 40 |
| B.3.4   | Test procedure .....   | 40 |
| B.3.4.1   | General .....  | 40 |
| B.3.4.2   | Overload .....   | 42 |
| B.3.4.3   | Peak flow discharge .....  | 42 |
| B.3.4.4   | Power breakdown / machine breakdown .....  | 42 |
| B.3.5   | Influent and effluent samplings .....  | 42 |
| B.4   | Sample analysis .....  | 43 |
| B.5   | Test report .....  | 43 |
| Annex C (normative) Test methods for structural behaviour ..... |  | 44 |

|  |   |           |
|--|---|-----------|
| C.1  | General .....                                       | 44        |
| C.2  | Crushing test for concrete plant .....              | 44        |
| C.2.1  | Crushing test methods .....                         | 44        |
| C.2.2  | Crushing test procedures .....                      | 45        |
| C.2.2.1  | Type A test (vertical load) .....                   | 45        |
| C.2.2.1.1  | Sample .....  | 45        |
| C.2.2.1.2  | Procedure .....                                     | 45        |
| C.2.2.1.3  | Expression of results .....                         | 45        |
| C.2.2.2  | Type B test (horizontal load) .....                 | 46        |
| C.2.2.2.1  | Sample .....  | 46        |
| C.2.2.2.2  | Procedure .....                                     | 46        |
| C.2.2.2.3  | Expression of results .....                         | 46        |
| C.2.2.3  | Type C test (vertical load) .....                   | 46        |
| C.2.2.3.1  | Sample .....  | 46        |
| C.2.2.3.2  | Procedure .....                                     | 47        |
| C.2.2.3.3  | Expression of results .....                         | 47        |
| C.3  | Vertical load test for PE, PP and PDCPD plant ..... | 47        |
| C.3.1  | Sample .....  | 47        |
| C.3.2  | Procedure .....                                     | 47        |
| C.3.3  | Expression of results .....                         | 48        |
| C.4  | Vacuum test for GRP plants .....                    | 48        |
| C.5  | Pit test .....                                      | 49        |
| C.5.1  | Sample .....  | 49        |
| C.5.2  | Procedure .....                                     | 49        |
| C.5.3  | Expression of results .....                         | 50        |
| <b>Annex D (normative) Mechanical characteristics used for structural behaviour calculation .....</b>  |   | <b>51</b> |
| D.1  | Concrete .....                                      | 51        |
| D.2  | GRP .....   | 51        |
| D.3  | PVC-U .....   | 51        |
| D.4  | PE and PP .....                                     | 51        |
| D.5  | Steel .....   | 51        |
| <b>Annex E (informative) Analysis method .....</b>   |   | <b>52</b> |
| <b>Annex ZA (informative) Clauses of this European Standard addressing the provisions of the EU<br/>Construction Products Regulation .....</b> |   | <b>53</b> |
| <b>ZA.1 Scope and relevant characteristics .....</b>   |   | <b>53</b> |
| <b>ZA.2 Procedure of attestation of conformity of packaged and/or site assembled domestic<br/>wastewater treatment plants .....</b>            |   | <b>55</b> |
| <b>ZA.2.1 System(s) of AVCP .....</b>  |   | <b>55</b> |
| <b>ZA.2.2 Declaration of performance (DoP) .....</b>   |   | <b>57</b> |
| <b>ZA.2.2.1 General .....</b>  |   | <b>57</b> |
| <b>ZA.2.2.2 Content .....</b>  |   | <b>57</b> |
| <b>ZA.2.2.3 Example of DoP .....</b>   |   | <b>58</b> |
| <b>ZA.3 CE marking and labelling .....</b>   |   | <b>60</b> |
| <b>Bibliography .....</b>  |   | <b>63</b> |