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103

EN 295-1:2013

Vitrified clay pipe DN150 – 1,0 – FN34 – F  
Vitrified clay pipe DN150 – 1,5 – FN34 – F

Buried drain and sewer systems for the conveyance of wastewater

| Essential characteristics   | Performance                |
|---|----------------------------|
| Reaction to fire  | Class A1                   |
| Crushing strength ( $F_N$ )   | 34 kN/m                    |
| <b>Longitudinal bending strength:</b>   |                            |
| Bending moment resistance (BMR)   | 4,0 kNm                    |
| <b>Dimensional tolerances, concerning:</b>  |                            |
| Internal diameter   | Within tolerance           |
| Length  | Within tolerance           |
| Squareness of ends  | Within tolerance           |
| Straightness  | Within tolerance           |
| Continuity of invert  | Within tolerance           |
| Joint inter-changeability   | System F                   |
| <b>Tightness (gas and liquid) and Permeability as:</b>  |                            |
| Watertightness  | Tight                      |
| Airtightness  | Tight                      |
| <b>Watertightness of joint assemblies, as:</b>  |                            |
| Angular deflection  | Tight                      |
| Shear resistance  | Tight                      |
| <b>Durability of crushing strength and longitudinal bending strength, against:</b>  |                            |
| Chemical resistance   | $\leq 0,15\%$ loss of mass |
| Resistance against high pressure water jetting <ul style="list-style-type: none"> <li>Moving nozzle</li> <li>Stationary nozzle</li> </ul> | 12 MPa<br>28 MPa           |
| Water absorption  | < 6% of mass               |
| <b>Durability of watertightness, against:</b>   |                            |
| Chemical and physical resistance to effluent  | Tight                      |
| Thermal cycling stability   | Tight                      |
| Long term thermal stability   | Tight                      |



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Vitrified clay connector GA DN150 – 0,6 – FN34 - F  
Vitrified clay connector GZ DN150 – 0,6 – FN34 - F

Buried drain and sewer systems for the conveyance of wastewater

| Essential characteristics   | Performance                |
|---|----------------------------|
| Reaction to fire  | Class A1                   |
| Crushing strength ( $F_N$ )   | 34 kN/m                    |
| <b>Dimensional tolerances, concerning:</b>  |                            |
| Internal diameter   | Within tolerance           |
| Length  | Within tolerance           |
| Squareness of ends  | Within tolerance           |
| Continuity of invert  | Within tolerance           |
| Joint inter-changeability   | System F                   |
| <b>Tightness (gas and liquid) and Permeability as:</b>  |                            |
| Watertightness  | Tight                      |
| Airtightness  | Tight                      |
| <b>Watertightness of joint assemblies, as:</b>  |                            |
| Angular deflection  | Tight                      |
| Shear resistance  | Tight                      |
| <b>Durability of crushing strength and longitudinal bending strength, against:</b>  |                            |
| Chemical resistance   | $\leq 0,15\%$ loss of mass |
| Resistance against high pressure water jetting <ul style="list-style-type: none"> <li>Moving nozzle</li> <li>Stationary nozzle</li> </ul> | 12 MPa<br>28 MPa           |
| Water absorption  | < 6% of mass               |
| <b>Durability of watertightness, against:</b>   |                            |
| Chemical and physical resistance to effluent  | Tight                      |
| Thermal cycling stability   | Tight                      |
| Long term thermal stability   | Tight                      |



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Vitrified clay bend DN150 – FN34 – F – 15°  
Vitrified clay bend DN150 – FN34 – F – 30°  
Vitrified clay bend DN150 – FN34 – F – 45°  
Vitrified clay bend DN150 – FN34 – F – 60°  
Vitrified clay bend DN150 – FN34 – F – 90°

Buried drain and sewer systems for the conveyance of wastewater

| Essential characteristics  | Performance      |
|--|------------------|
| Reaction to fire   | Class A1         |
| <b>Dimensional tolerances, concerning:</b>                                   |                  |
| Internal diameter  | Within tolerance |
| Angle of curvature and radius  | Within tolerance |
| Continuity of invert   | Within tolerance |
| Joint inter-changeability  | System F         |
| <b>Tightness (gas and liquid) and Permeability as:</b>                       |                  |
| Watertightness   | Tight            |
| Airtightness   | Tight            |
| <b>Watertightness of joint assemblies, tested as joint assembly of pipes</b> |                  |
| Angular deflection   | Tight            |
| Shear resistance   | Tight            |
| <b>Durability of watertightness, against:</b>                                |                  |
| Chemical and physical resistance to effluent                                 | Tight            |
| Thermal cycling stability  | Tight            |
| Long term thermal stability  | Tight            |



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Vitrified clay junction DN150100 – FN34 – F – 45°  
Vitrified clay junction DN150100 – FN34 – F – 90°  
Vitrified clay junction DN150125 – FN34 – F – 45°  
Vitrified clay junction DN150125 – FN34 – F – 90°  
Vitrified clay junction DN150150 – FN34 – F – 45°  
Vitrified clay junction DN150150 – FN34 – F – 90°


Buried drain and sewer systems for the conveyance of wastewater

| Essential characteristics  | Performance      |
|--|------------------|
| Reaction to fire   | Class A1         |
| <b>Dimensional tolerances, concerning:</b>                                   |                  |
| Internal diameter  | Within tolerance |
| Squareness of ends   | Within tolerance |
| Branch angle   | Within tolerance |
| Continuity of invert   | Within tolerance |
| Joint inter-changeability  | System F         |
| <b>Tightness (gas and liquid) and Permeability as:</b>                       |                  |
| Watertightness   | Tight            |
| Airtightness   | Tight            |
| <b>Watertightness of joint assemblies, tested as joint assembly of pipes</b> |                  |
| Angular deflection   | Tight            |
| Shear resistance   | Tight            |
| <b>Durability of watertightness, against:</b>                                |                  |
| Chemical and physical resistance to effluent                                 | Tight            |
| Thermal cycling stability  | Tight            |
| Long term thermal stability  | Tight            |

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| EN 295-1:2013<br><br>Vitrified clay repair junction DN150150 – FN34 – F – 45°<br>Vitrified clay repair junction DN150150 – FN34 – F – 90°<br><br>Buried drain and sewer systems for the conveyance of wastewater |                    |
| <b>Essential characteristics</b>   | <b>Performance</b> |
| <b>Reaction to fire</b>  | Class A1           |
| <b>Dimensional tolerances, concerning:</b>   |                    |
| Internal diameter  | Within tolerance   |
| Squareness of ends   | Within tolerance   |
| Branch angle   | Within tolerance   |
| Continuity of invert   | Within tolerance   |
| Joint inter-changeability  | System F           |
| <b>Tightness (gas and liquid) and Permeability as:</b>   |                    |
| Watertightness   | Tight              |
| Airtightness   | Tight              |
| <b>Watertightness of joint assemblies, tested as joint system of flexible couplings</b>  |                    |
| Angular deflection   | Tight              |
| Shear resistance   | Tight              |
| <b>Durability of watertightness, against:</b>  |                    |
| Chemical and physical resistance to effluent   | Tight              |
| Thermal cycling stability  | Tight              |
| Long term thermal stability  | Tight              |

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| EN 295-4:2013<br><br>Vitrified clay connector GE DN150 – FN34 - F<br><br>Buried drain and sewer systems for the conveyance of wastewater |                    |
| <b>Essential characteristics</b>   | <b>Performance</b> |
| <b>Reaction to fire</b>  | Class A1           |
| <b>Dimensional tolerances, concerning:</b>   |                    |
| Internal diameter  | Within tolerance   |
| Squareness of ends   | Within tolerance   |
| Continuity of invert   | Within tolerance   |
| Joint inter-changeability  | System F           |
| <b>Tightness (gas and liquid) and Permeability as:</b>   |                    |
| Watertightness   | Tight              |
| Airtightness   | Tight              |
| <b>Watertightness of joint assemblies, tested as joint assembly of pipes</b>   |                    |
| Angular deflection   | Tight              |
| Shear resistance   | Tight              |
| <b>Durability of watertightness, against:</b>  |                    |
| Chemical and physical resistance to effluent   | Tight              |
| Thermal cycling stability  | Tight              |
| Long term thermal stability  | Tight              |

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| EN 295-4:2013<br><br>Vitrified clay adaptor DN100150 – FN34 – F<br>Vitrified clay adaptor DN125150 – FN34 – F<br><br>Buried drain and sewer systems for the conveyance of wastewater |                    |
| <b>Essential characteristics</b>   | <b>Performance</b> |
| <b>Reaction to fire</b>  | Class A1           |
| <b>Dimensional tolerances, concerning:</b>   |                    |
| Internal diameter  | Within tolerance   |
| Squareness of ends   | Within tolerance   |
| Continuity of invert   | Within tolerance   |
| Joint inter-changeability  | System F           |
| <b>Tightness (gas and liquid) and Permeability as:</b>   |                    |
| Watertightness   | Tight              |
| Airtightness   | Tight              |
| <b>Watertightness of joint assemblies, tested as joint assembly of pipes</b>   |                    |
| Angular deflection   | Tight              |
| Shear resistance   | Tight              |
| <b>Durability of watertightness, against:</b>  |                    |
| Chemical and physical resistance to effluent   | Tight              |
| Thermal cycling stability  | Tight              |
| Long term thermal stability  | Tight              |

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| EN 295-4:2013<br><br>Vitrified clay stopper DN150 – FN34 – F<br><br>Buried drain and sewer systems for the conveyance of wastewater |                    |
| <b>Essential characteristics</b>  | <b>Performance</b> |
| <b>Reaction to fire</b>   | Class A1           |
| <b>Dimensional tolerances, concerning:</b>  |                    |
| Joint inter-changeability   | System F           |
| <b>Tightness (gas and liquid) and Permeability as:</b>  |                    |
| Watertightness  | Tight              |
| Airtightness  | Tight              |
| <b>Watertightness of joint assemblies, tested as joint assembly of pipes</b>  |                    |
| Angular deflection  | Tight              |
| Shear resistance  | Tight              |
| <b>Durability of watertightness, against:</b>   |                    |
| Chemical and physical resistance to effluent  | Tight              |
| Thermal cycling stability   | Tight              |
| Long term thermal stability   | Tight              |



| <b>Declaration of Performance 103</b>  |  |
|--|--|
| 1. Unique identification   | Vitrified clay pipe system DN150 – FN34 – F  |
| 2. Type  | Vitrified clay pipe DN150 – 1,0 – FN34 – F<br>Vitrified clay pipe DN150 – 1,5 – FN34 – F<br>Vitrified clay connectors GA DN150 – 0,6 – FN34 – F<br>Vitrified clay connectors GZ DN150 – 0,6 – FN34 – F<br>Vitrified clay bend DN150 – FN34 – F – 15°<br>Vitrified clay bend DN150 – FN34 – F – 30°<br>Vitrified clay bend DN150 – FN34 – F – 45°<br>Vitrified clay bend DN150 – FN34 – F – 60°<br>Vitrified clay bend DN150 – FN34 – F – 90°<br>Vitrified clay junction DN150100 – FN34 – F – 45°<br>Vitrified clay junction DN150100 – FN34 – F – 90°<br>Vitrified clay junction DN150125 – FN34 – F – 45°<br>Vitrified clay junction DN150125 – FN34 – F – 90°<br>Vitrified clay junction DN150150 – FN34 – F – 45°<br>Vitrified clay junction DN150150 – FN34 – F – 90°<br>Vitrified clay repair junction DN150150 – FN34 – F – 45°<br>Vitrified clay repair junction DN150150 – FN34 – F – 90°<br>Vitrified clay connectors GE DN150 – FN34 – F<br>Vitrified clay adaptor DN100150 – FN34 – F<br>Vitrified clay stopper DN150 – FN34 – F |
| 3. Intended use  | Buried drain and sewer systems for the conveyance of wastewater  |
| 4. Name and contact address of the manufacturer  | Steinzeug-Keramo N.V.<br>Paalsteenstraat 36<br>B-3500 Hasselt Belgium<br>Telephone: +32 11 265 279   |
| 5. Name and contact address of the authorised representative                                     | N.A.   |
| 6. System of assessment and verification of the construction product                             | System 4   |
| 7. Declaration of performance concerning a construction product covered by a harmonised standard | Yes  |
| 8. European Technical Assessment issued  | N.A.   |

|   |                      |   |
|---|----------------------|---|
| 9. Declared performance:  |                      |   |
| <b>Essential characteristics</b>  | <b>Performance</b>   | <b>Harmonised technical specification</b> |
| Reaction to fire  | Class A1             | EN295-1:2013<br>EN295-4:2013              |
| Crushing strength ( $F_N$ ) <sup>a)</sup>   | 34 kN/m              |   |
| <b>Longitudinal bending strength: <sup>b)</sup></b>   |                      |   |
| Bending moment resistance (BMR) <sup>b)</sup>   | 4,0 kNm              |   |
| <b>Dimensional tolerances, concerning:</b>  |                      |   |
| Internal diameter <sup>e)</sup>   | Within tolerance     |   |
| Length <sup>a)</sup>  | Within tolerance     |   |
| Squareness of ends <sup>d)</sup>  | Within tolerance     |   |
| Straightness <sup>b)</sup>  | Within tolerance     |   |
| Angle of curvature and radius <sup>c)</sup>   | Within tolerance     |   |
| Branch angle <sup>d)</sup>  | Within tolerance     |   |
| Continuity of invert <sup>e)</sup>  | Within tolerance     |   |
| Joint inter-changeability   | System F             |   |
| <b>Tightness (gas and liquid) and Permeability as:</b>  |                      |   |
| Watertightness  | Tight                |   |
| Airtightness  | Tight                |   |
| <b>Watertightness of joint assemblies, as:</b>  |                      |   |
| Angular deflection  | Tight                |   |
| Shear resistance  | Tight                |   |
| <b>Durability of crushing strength and longitudinal bending strength against:</b>   |                      |   |
| Chemical resistance   | ≤ 0,15% loss of mass |   |
| Resistance against high pressure water jetting <ul style="list-style-type: none"> <li>Moving nozzle</li> <li>Stationary nozzle</li> </ul>   | 12 MPa<br>28 MPa     |   |
| Water absorption  | < 6% of mass         |   |
| <b>Durability of watertightness, against:</b>   |                      |   |
| Chemical and physical resistance to effluent  | Tight                |   |
| Thermal cycling stability   | Tight                |   |
| Long term thermal stability   | Tight                |   |
| The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.                                   |                      |   |
| a) Only for pipes and connectors GA/GZ<br>b) Only for pipes<br>c) Only for bends<br>d) Only for junctions & repair junctions<br>e) For pipes, bends, junctions, repair junctions, connectors & adaptors<br>f) For pipes, junctions, repair junctions, connectors & adaptors |                      |   |

Signed for and on behalf of the manufacturer:

Name and function: Mr. R. van Veldhoven, Quality Director

Place and date: Frechen, 2 July 2013

Signature:

