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|--|---|--|
| Place and date of initial registration   | Dresden, Mai 2019 (Germany)                     |  |
| Dimension range  | 8"– 24" (DN 150 – DN 600)                       |  |
| Wall thickness in cured condition  | 3,5 mm / 4,5 mm / 5,4 mm                        |  |
| Number of layers   | minimum 3                                       |  |
| Longitudinal seam  | none  |  |
| Winding  | none  |  |
| Permissible elongation   | 3 %   |  |
| Liner construction as outlined in  | DIBt approval, appendix 1 and 2                 |  |
| Specific density according to DIN EN ISO 1183-2  | 1.6 g/cm <sup>3</sup> ± 0.5 g/cm <sup>3</sup>   |  |
| Glass content according to DIN EN ISO 1172   | ≥ 50% (by mass)                                 |  |
| Mean abrasion depth after 100,000 load cycles according to DIN-EN 295-3 (Darmstadt tipping trough) | 0,09 mm   |  |
| Barcol hardness according to DIN EN 59   | ≥ 40 IRHD                                       |  |
| Application  | municipal wastewater, rainwater, sewage         |  |
| Dimension groups   | ≤ 8"  | > 8"   |
| Short-term circumferential E-Modulus according to DIN EN 1228 DIN EN ISO 11296-4:2011              | ≥ 1,189,309 psi<br>(≥ 8,200 N/mm <sup>2</sup> ) | ≥ 2,277,092 psi<br>(≥ 15,700 N/mm <sup>2</sup> ) |
| Long-term circumferential E-Modulus* ex 50 years according to DIN EN 761                           | 861,814 psi<br>(5,942 N/mm <sup>2</sup> )       | 1,725,078 psi<br>(11,893 N/mm <sup>2</sup> )     |
| Short-term bending E-Modulus according to DIN EN ISO 178 and DIN EN ISO 11296-4:2011               | ≥ 1,232,820 psi<br>(≥ 8,500 N/mm <sup>2</sup> ) | ≥ 1,994,269psi<br>(≥ 13,750 N/mm <sup>2</sup> )  |
| Short-term bending strength according to DIN EN ISO 178 and DIN EN ISO 11296-4:2011                | ≥ 39,595 psi<br>(≥ 273 N/mm <sup>2</sup> )      | ≥ 22,045 psi<br>(≥ 152 N/mm <sup>2</sup> )       |
| Long-term bending strength* ex 50 years according to DIN EN 761                                    | 28,862 psi<br>(197 N/mm <sup>2</sup> )          | 16,679 psi<br>(115 N/mm <sup>2</sup> )           |
| Retention factor A* after 10 000 h according to DIN EN 761   | 1.38 / 72 %                                     | 1.32 / 76 %                                      |
| Creep behavior after 24 h according to DIN EN ISO 899-2  | ≤ 7 %   | ≤ 7 %  |

\* These values are used for the static calculation of the Liner stability according to DWA-A 143-2.

Status: 30<sup>th</sup> May 2023

Currently available nominal widths and wall thicknesses

| Diameter | Structural wall thickness |
|----------|---------------------------|
| 9"       | On request                |
| 10"      | 3,5 mm                    |
| 12"      | 3,5 mm                    |
| 16"      | 4,5 mm                    |
| 20"      | 5,4 mm                    |
| 24"      | 5,4 mm                    |

Nominal widths and wall thicknesses available in the future

| DN (mm) | Structural wall thickness |
|---------|---------------------------|
| 8"      | 3 mm, 4 mm                |
| 9"      | 3 mm, 4 mm                |
| 10"     | 3 mm, 4 mm                |
| 12"     | 3 mm, 4 mm                |
| 16"     | 3 mm, 4 mm, 5mm           |
| 20"     | 3 mm, 4 mm, 5 mm, 6 mm    |
| 24"     | 3 mm, 4mm, 5 mm, 6 mm     |