

DECLARATION OF PERFORMANCE

Manufacturer : Uponor GmbH
 Product family : Ecoflex Quattro
 Product parameters : U-Values
 Analysing organization : Stressfield Oy

Product and parameters:

Identification of the product type	Uponor Ecoflex Quattro 2xPN 6 (SDR 11) + 2xPN 10 (SDR 7.4)
Sizes	2x25-28-18/175, 2x25-25-20/175, 2x25-25-25/175, 2x32-25-20/175, 2x32-25-25/175, 2x32-28-18/175, 2x32-28-28/175, 2x32-32-18/175, 2x32-32-20/175, 2x32-32-25/175, 2x32-32-32/175, 2x40-32-18/200, 2x40-32-20/200, 2x40-40-25/200, 2x40-40-28/200, 2x40-40-40/200.
Assesment of performance Applied parameters	Numerical simulation with ANSYS Fluent 2021 R1 solver. Product material thermal conductivities at 50 °C. Heat losses, including soil to ambient thermal transmittance, according to EN 15632-1 Appendix B.

Declared performance:

Ecoflex Quattro	U-Value ¹⁾ [W/mK]	Heat loss ²⁾ [W/m] for corresponding $\Delta\vartheta$ [K] ³⁾						
		20	30	40	50	60	70	80
2x25-28-18/175	0.270	5.40	8.10	10.81	13.51	16.21	18.91	21.61
2x25-25-20/175	0.266	5.32	7.98	10.64	13.30	15.96	18.62	21.28
2x25-25-25/175	0.273	5.46	8.19	10.92	13.65	16.38	19.11	21.84
2x32-25-20/175	0.290	5.81	8.71	11.61	14.51	17.42	20.32	23.22
2x32-25-25/175	0.296	5.93	8.89	11.86	14.82	17.79	20.75	23.72
2x32-28-18/175	0.294	5.88	8.83	11.77	14.71	17.65	20.59	23.53
2x32-28-28/175	0.306	6.13	9.19	12.26	15.32	18.39	21.45	24.52
2x32-32-18/175	0.303	6.05	9.08	12.11	15.13	18.16	21.18	24.21

<cont.>

¹⁾ See 'Applied parameters' above.

²⁾ According to EN 15632-1 Appendix B

³⁾ Calculation example for $\Delta\vartheta$:

Heating flow at 68 °C, heating return at 34 °C, warm tap water flow at 64 °C, warm tap water circulation at 54 °C, and ambient at 5 °C $\rightarrow \Delta\vartheta = (68\text{ °C} + 34\text{ °C} + 64\text{ °C} + 54\text{ °C})/4 - 5\text{ °C} = 50\text{ °C}$.

Declared performance:

Ecoflex Quattro	U-Value ¹⁾ [W/mK]	Heat loss ²⁾ [W/m] for corresponding $\Delta\vartheta$ [K] ³⁾						
		20	30	40	50	60	70	80
<cont.>								
2x32-32-20/175	0.305	6.10	9.14	12.19	15.24	18.29	21.33	24.38
2x32-32-25/175	0.311	6.22	9.33	12.43	15.54	18.65	21.76	24.87
2x32-32-32/175	0.322	6.43	9.65	12.86	16.08	19.30	22.51	25.73
2x40-32-18/200	0.307	6.14	9.21	12.28	15.35	18.41	21.48	24.55
2x40-32-20/200	0.308	6.17	9.25	12.33	15.42	18.50	21.58	24.66
2x40-40-25/200	0.328	6.56	9.84	13.12	16.40	19.68	22.96	26.24
2x40-40-28/200	0.331	6.62	9.93	13.24	16.55	19.86	23.17	26.48
2x40-40-40/200	0.347	6.95	10.42	13.89	17.37	20.84	24.31	27.79

¹⁾ See 'Applied parameters' above.

²⁾ According to EN 15632-1 Appendix B

³⁾ Calculation example for $\Delta\vartheta$:

Heating flow at 68 °C, heating return at 34 °C, warm tap water flow at 64 °C, warm tap water circulation at 54 °C, and ambient at 5 °C → $\Delta\vartheta = (68\text{ °C} + 34\text{ °C} + 64\text{ °C} + 54\text{ °C})/4 - 5\text{ °C} = 50\text{ °C}$.

Signed on behalf of the Analysing organization by

Date



11.4.2022

Vesa Tanskanen, D.Sc. (tech)