

WALLTITE® v.3
Long Term Thermal Resistance Values
2020 Reference Guide

The long term thermal resistance data presented in this table has been derived from testing conducted according to the requirements of standards,

CAN/ULC-S705.1-15, Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Material – Specification and

CAN/ULC-S770-09, Standard Test Method for Determination of Long Term Thermal Resistance of Closed-Cell Thermal Insulating Foams.

Standard CAN/ULC-S770-09 is referenced in standard CAN/ULC- S705.1-15 under subsection 2.1.

Furthermore, clause 5.5.6.2 of CAN/ULC-S705.1-15 stipulates the following: “The thermal resistance value measured shall be the design thermal resistance values.”

Standard CAN/ULC-S705.1-15 is referenced in the 2012 Ontario Building Code effective January 1, 2020 and the 2015 National Building Code of Canada 2018 Revisions and Errata Package under the following items:

Section 1.3 Referenced Documents and Organizations Sentence 1.3.1.2.(1)
 Applicable Editions (see Table 1.3.1.2.)

Section 5.10 Standards

Sentence 5.10.1.1.(1) Compliance with Applicable Standards (see Table 5.10.1.1.)

Section 9.25 Heat Transfer, Air Leakage and Condensation Control

Subsection 9.25.2 Thermal Insulation
 Article 9.25.2.2. Insulation Materials

Standard CAN/ULC-S770-09 is also referenced in the 2015 National Building Code of Canada in the explanatory note A-9.36.2.4.(1) (see Table A-9.36.2.4.(1)-D).

LTRR measurements were conducted by Element of Mississauga (ON), an independent laboratory, and are recorded in report no. 19-06-P0114.

Additional information on the aging process of foam thermal insulations and the design thermal resistance of polyurethane foams is found in Use of Field-Applied Polyurethane Foams in Buildings, Construction Technology Update No. 32, IRC-NRC, M.T. Bomberg, M.K. Kumaran (December 1999).47

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| Thermal Resistance | | Thickness | |
|---|-----------------------------------|-----------|------|
| R-Value (ft ² ·hr·°F/Bt u) | RSI (m ² ·°C/ W) | (inches) | (mm) |
| 11 | 1.94 | 1.9 | 49 |
| 12 | 2.11 | 2.1 | 53 |
| 13 | 2.29 | 2.3 | 58 |
| 14 | 2.47 | 2.4 | 62 |
| 15 | 2.68 | 2.6 | 67 |
| 16 | 2.82 | 2.8 | 71 |
| 17 | 2.99 | 2.9 | 73 |
| 18 | 3.17 | 3.0 | 77 |
| 19 | 3.35 | 3.2 | 81 |
| 20 | 3.52 | 3.4 | 85 |
| 21 | 3.70 | 3.5 | 90 |
| 22 | 3.87 | 3.7 | 94 |
| 23 | 4.05 | 3.8 | 96 |
| 24 | 4.23 | 3.9 | 100 |
| 25 | 4.40 | 4.1 | 104 |
| 26 | 4.58 | 4.3 | 109 |
| 27 | 4.76 | 4.4 | 113 |
| 28 | 4.93 | 4.6 | 117 |
| 29 | 5.11 | 4.7 | 119 |
| 30 | 5.28 | 4.8 | 122 |
| 31 | 5.46 | 4.9 | 125 |
| 32 | 5.64 | 5.1 | 129 |
| 33 | 5.81 | 5.2 | 132 |
| 34 | 5.99 | 5.4 | 137 |
| 35 | 6.16 | 5.5 | 140 |
| 36 | 6.34 | 5.6 | 143 |
| 37 | 6.52 | 5.8 | 147 |
| 38 | 6.69 | 5.9 | 150 |
| 39 | 6.87 | 6.1 | 154 |
| 40 | 7.04 | 6.2 | 158 |
| 41 | 7.22 | 6.4 | 162 |
| 42 | 7.40 | 6.5 | 166 |
| 43 | 7.57 | 6.7 | 169 |
| 44 | 7.75 | 6.8 | 172 |
| 45 | 7.93 | 6.9 | 175 |
| 46 | 8.10 | 7.0 | 178 |
| 47 | 8.28 | 7.2 | 182 |
| 48 | 8.45 | 7.3 | 186 |
| 49 | 8.63 | 7.5 | 190 |
| 50 | 8.81 | 7.6 | 194 |
| 51 | 8.98 | 7.7 | 196 |
| 52 | 9.16 | 7.8 | 199 |
| 53 | 9.33 | 8.0 | 203 |
| 54 | 9.51 | 8.1 | 207 |
| 55 | 9.69 | 8.3 | 210 |
| 56 | 9.86 | 8.4 | 214 |
| 57 | 10.04 | 8.6 | 218 |
| 58 | 10.21 | 8.7 | 222 |
| 59 | 10.39 | 8.9 | 226 |
| 60 | 10.57 | 9.0 | 230 |

