



# Long Term Thermal Resistance (LTTR) Values In Accordance with CAN/ULC S770

## Background

CAN/ULC S770 is a test procedure that estimates the long term R-value of cellular plastics manufactured with the intent of retaining a blowing agent other than air for a period longer than 180 days. This procedure is a prescriptive application of ASTM C1303 using slicing and scaling. Long term R-value is defined as the R-value estimated at 5 years.

## Data

Table 1 provides the typical LTTR values of STYROFOAM™ Extruded Polystyrene Insulation when tested to CAN/ULC S770 and Table 2 provides the typical LTTR values of STYROFOAM insulation products with carbon black (e.g. STYROFOAM™ CAVITYMATE™ Ultra).

TABLE 1

LTTR of STYROFOAM Extruded Polystyrene Insulation as per CAN/ULC S770	
Thickness, mm (Inches)	LTTR
25 mm (1")	.87 (5.0)
50 mm (2")	1.84 (10.6)
75 mm (3")	2.81 (16.2)
100 mm (4")	3.81 (22.0)

TABLE 2

LTTR of STYROFOAM Extruded Polystyrene Insulation with Carbon Black as per CAN/ULC S770	
Thickness, mm (Inches)	LTTR
25 mm (1")	.97 (5.5)
50 mm (2")	1.98 (11.4)
75 mm (3")	3.05 (17.6)
100 mm (4")	4.11 (23.7)

Note: In accordance with the revisions to CAN/ULC S770, the following information is provided on bias of the procedure:

The bias of this test method has not been determined. Some preliminary data reported by the industry are showing that in certain cases the bias could be an overprediction.

Based on historical data, Dow recommends that a design value of 5.0/in be used for STYROFOAM Extruded Polystyrene insulation and a design value of 5.6/in be used for STYROFOAM CAVITYMATE Ultra.

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