

DP, DE & DL SERIES DOORS THERMAL & SOUND TRANSMISSION

TECHNICAL DATA SHEET No. 107

“R” VALUE and “U” VALUE

R and U values relate to insulating performance characteristics. The higher the R value and the lower the U value, the higher the insulating properties of the product. Polystyrene and polyurethane cores have higher insulating qualities than honeycomb and steel-stiffened core doors.

The R and U values have been updated as a result of a change to the testing method of SDI 113 (Standard Practice for Determining the Steady State Thermal Transmittance of Steel Door and Frame Assemblies). In the previous standard, only a portion of the door was tested. This method does not reflect operable conditions of the entire door hung in the frame with hardware. The new version of the standard tests the entire assembly, which represents real-world conditions.

SOUND TRANSMISSION CLASS (S.T.C.)

Was derived graphically from the transmission loss measurement over a nine frequency range by an independent testing laboratory. The higher the class rating, the better the sound deadening properties of the door.

The results shown below for Republic doors are the results of actual tests conducted by independent testing laboratories.

REPUBLIC DOORS						
DOOR SERIES	DESCRIPTION	“U” VALUE		SOUND TRANSMISSION CLASS	“R” VALUE	
		C518	C1363	E90/E413	C518	C1363
DL/DP/DE	1-3/4” Flush With Paper Honeycomb core	0.34	.59	38	2.94	1.70
DL/DP/DE Insulated	1-3/4” Flush With Polystyrene Core	0.13	.41	35	7.61	2.43
DL/DE Insulated	1-3/4” Flush With Polyurethane Core	0.10	.39	33	10.11	2.56
DL/DE 250° Temp Rise Door	1-3/4” Flush With Gypsum Fiberboard Composite Core	0.26	.56	38	3.85	1.80
DL/DE Steel Stiffened	1-3/4” Steel Stiffened Core With Mineral Wool or Fiberglass Batts	0.15	.61	NA	6.8	1.65
For higher STC ratings refer to Republic Certified STC Assemblies						

Revised 9/16

- ASTM C518 - Calculated Thermal Performance
- ASTM C1363 - Operable Thermal Values
- ASTM E90 - Measurement of Sound Transmission Loss
- ASTM E413 - Classification for Rating Sound Insulation