

Calculation and Declaration of U-Values of Revolving Doors

Conform the requirements of the Construction Products Regulation 2011 and in accordance to the product standard the following manufacturers declare that the powered pedestrian doors as per below matrix comply with;

- **EN 16361; 2019**
Power operated pedestrian doorsets - Product standard, performance characteristics - Pedestrian doorsets, other than swing type, initially designed for installation with power operation
As a result the U-Values of Revolving Doors shall be determined according to
- **EN-ISO 10077-1; 2017 and EN-ISO 10077-2;2017**
Thermal performance of windows, doors and shutters - Calculation of thermal transmittance

As EN-ISO 10077-1 and -2: 2017 is a standard specified for windows, doors and shutters with two-dimensional "flat" surfaces it does not exactly describe the fit for Revolving Doors. Therefore, in conjunction with 2 specialized research institutes Rise and Peutz, the Industry Association for automatic revolving doors have reworked the EN-ISO 10077-1 and-2 standard to accommodate U-value calculations for 3-dimensional products. This has resulted in a standardized method; a formula for the calculation of U-values for different types of revolving doors.

To assure comparable product performance the Association has established a standard parameter set that will be used by each Manufacturer for the declaration.

The following tables show indicative values for an archetype revolving door, as per the industry standard. More accurate values can be obtained upon request at the individual manufacturer.



U-values

Following U-values are applicable for standard revolving doors with:













- Single pane safety glass, thickness 8 mm
- Extrusions without thermal separation, only glass, connected with the wall 40 mm
- Canopy height 400 mm, no insulation. Canopy in stainless steel (2 mm). The heat transfer between the canopy and revolving part are neglected and there is no heat transfer from the canopy to above materials/surroundings.
- Night Locking Doors in opened and closed position Design as shown in table

Manufacturer Dormakaba declares that the powered pedestrian door













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has the following U-values:













2-wing door set

						U-value in W/m ² K					
		Open		Closed							
Clear height (m)											
4,0		5.5	4.6	5.5	4.6	5.5	4.6	5.5	4.6	5.5	4.6
3,5		5.5	4.6	5.5	4.6	5.5	4.6	5.5	4.6	5.5	4.5
3,0		5.5	4.6	5.5	4.6	5.5	4.6	5.5	4.6	5.5	4.5
2,5		5.5	4.6	5.4	4.6	5.4	4.6	5.4	4.5	5.4	4.5
2,2		5.4	4.6	5.4	4.6	5.4	4.6	5.4	4.5	5.4	4.5
Diameter (m)		2		3		4		5		6	

3-wing door set

						U-value in W/m ² K					
		Open		Closed							
Clear height (m)											
4,0		5.4	4.1	5.4	4.1	5.4	4.1	5.4	4.1	5.4	4.0
3,5		5.4	4.2	5.4	4.1	5.4	4.1	5.4	4.1	5.4	4.0
3,0		5.4	4.2	5.4	4.1	5.4	4.1	5.3	4.1	5.3	4.0
2,5		5.4	4.2	5.3	4.1	5.3	4.1	5.3	4.1	5.3	4.1
2,2		5.4	4.2	5.3	4.1	5.3	4.1	5.3	4.1	5.3	4.1
Diameter (m)		2		3		4		5		6	

4-wing door set

						U-value in W/m ² K					
		Open		Closed							
Clear height (m)											
4,0		5.0	4.1	4.9	4.1	4.8	4.0	4.8	4.0	4.8	4.0
3,5		5.0	4.1	4.9	4.1	4.8	4.1	4.8	4.0	4.8	4.0
3,0		5.0	4.1	4.9	4.1	4.8	4.1	4.8	4.0	4.8	4.0
2,5		5.0	4.1	4.9	4.1	4.8	4.1	4.8	4.0	4.8	4.0
2,2		5.0	4.2	4.9	4.1	4.8	4.1	4.8	4.1	4.8	4.0
Diameter (m)		2		3		4		5		6	