

THERMALLY BROKEN ENTRANCES

Dawson introduces its Thermally Broken Entrances that are designed to meet the ever-increasing stringent energy efficiency building codes without losing the beautiful aesthetic appeal or the customization that Dawson is known for.

Until now, thermally broken entrances have only been available using limited extruded aluminum profiles. The Dawson thermal system utilizes internal pour and debridge extrusions, which acts as the door's skeleton. A door pan is custom laser cut and bent to fit every project's exact specifications and is then affixed to the sub-structure. The door frame utilizes thermal pour and debridge extrusions as well. Dawson thermal entrances do not have any visible seams on the door or frame's face, making its product the only one in the industry offering this option.

KEY BENEFITS

- Overall thermal performance is greatly improved compared to nonthermally broken entrances
- Dawson Thermally Broken Entrances have an NFRC U-value far less than the current energy requirement of .77
- Thermally Broken Entrances have a much higher condensation resistance factor, which significantly reduces the opportunity for interior frost build-up
- Dawson factory glazes all thermal doors and frames using 1 inch thick low-E insulated glass. This dramatically impacts the SHGC of the entrance and ultimately conserves either heating or cooling costs.
- Thermally broken entrances aid in acoustical mitigation, thus reducing unwanted noise from entering the building.



DAWSON THERMAL PERFORMANCE

Figure 1 shows a comparison between a Dawson thermally broken door top rail and a traditional Dawson non-thermally broken top rail. The U-Value listed under each image represents the entire door system calculated using the respective construction methods. The non-thermally broken door on the left side has a calculated U-value of .8, which does not meet the current industry standard U-value of .77. The thermally broken door on the right side has a calculated U-value of .47, which far exceeds all current energy requirements.

The coefficient of heat transfer (U-value) was calculated by Dawson engineers using a simulation performed according to the NFRC 100 procedure and the ISO 15099 standard. THERM version 7.7.10 and WINDOW version 7.7.10 software developed by the Lawrence Berkley National Laboratory were used to perform all calculations.

Figure 2 has a typical elevation drawing of a Dawson balanced entrance. The overall size of the entrance is 6'-6" wide x 9'-0" tall. The total calculated U-value of this Dawson entrance is .410 (Btu/h ft²-F), and the SHGC is .208 (1" insulated Low-E glass was used in this calculation). The calculations are based on NFRC 100 standards with an exterior air temperature of -.4° F, an interior ambient temperature of 69.8° F, and an exterior wind velocity of 12.3 mph. Calculation reports are available upon request for our standard entrances (pairs of doors with immediate frame or single door with an immediate frame). In the event that a project requires specific thermal analysis of a custom non-typical entrance, Dawson engineers can provide complete systems U-values upon request. This information will be submitted within our complete shop drawing submittal. Please note that this service must be requested at the time of the project quotation.







DAWSON

A family-owned and operated business since 1946, Dawson Doors is the leading manufacturer of high quality architectural products offering balanced and standard swing doors and entrances. Our Custom and Designer series are manufactured from the highest quality stainless steel and bronze materials. We provide exquisite entrances to some of the most prestigious buildings around the country and throughout the world.

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