

Aluminum Storefront Systems	Steel Storefront Systems
Sustainability	
High heat and cold transfer (highly conductive); higher risk of interior condensation than steel	Moderate heat and cold transfer (moderately conductive). Steel conducts heat at approx. 1/4 the rate of aluminum; less risk of interior condensation
Thermal breaks can improve high conductivity, but can sacrifice strength of structural members	Thermal breaks are not required due to the moderate conductivity of steel
Very costly to recycle due to high amount electricity required; far lower lifecycle than steel	Inexpensive to recycle; in part due to a) magnetic properties that make it easy to separate, 2) far less energy required to recycle steel scrap than aluminum scrap. Unsurpassed lifecycle due to durability.
Long term durability compromised due to sagging of horizontals and opening of joints due to expansion and contraction	Superior long-term durability due to strength of material; no sagging of horizontals or joint concerns from expansion and contraction
Structural Performance & Fabrication	
Multitude of intricate profiles available, though expensive to extrude custom profiles	Inexpensive to press brake; Roll formed options also available
Structural mullions are limited to larger profile square / rectangular tube, necessary for strength	Structural mullion options include square and rectangular tube, C and U channels, I profiles, T profiles, or round profiles; profiles can be much smaller than aluminum and offer superior strength
Limited span capabilities	Long span capabilities
Large profiles necessary in longer spans; Must be tied to structural steel; Often requires internal steel stiffeners	Small profiles possible in long spans; Structural members can be integrated into profiles; Self-supporting due to strength of steel itself
Exposed structural steel creates unsightly interior footprint	No interior footprint due to integrated structural members
Electrolysis problems in pairing with steel	No electrolytic concerns
When aluminum is cut and joined, anodizing is compromised and oxidation commonly occurs on tube ends and at joints	Welded joints eliminate oxidation concerns; stick members are fully painted (ends included); galvanized and stainless steel are available for corrosive environments
Mechanically fastened joints (clip/spline) are not as strong as welds; material is soft, threads in raceways easily strip	Welds superior to mechanically fastened joints; threading possible into thick-walled members without risk of stripping
No exposed fasteners, concealed clip systems	Able to conceal fasteners in most applications; intricate profiles can be roll-formed and clip-fastened
Moderate failure rate of working components (doors, windows, etc.) over time; tie-rod type door construction has a very high failure rate; ventilators tend to rack over time	Extremely low structural failure rate of working components (doors, windows, etc.) over time
Specialty Ratings	
Minimal fire rating capabilities; not suited to carry weight of heavy fire-rated, ballistic, or acoustical glazing - requires additional structural members	Maximum fire rating capabilities; readily supports heavy fire rated, ballistic, or acoustical glazing
Finishes & Cladding	
Kynar finishes are durable; chalking and fading are problems with certain colors	Coraflon is the "Kynar" for steel; high-performance Tnemec finishes also available including metallics and custom colors
Stainless must be clad over aluminum and has very poor performance rating over time due to de-lamination	Complete authentic stainless steel systems available
Installation	
Intensive field labor required on most systems, including stick-built ("can" and "stick-built" / clip systems)	Reduced field labor due to modular construction; competitive with aluminum systems in terms of overall cost
Historical Projects	
No value in historical restoration or duplication of storefront and window systems	High value in historical duplication of "period" steel storefront and window systems; original hot-rolled profiles readily available