

COMMENTS			
CLAD WOOD	APPEARANCE	OPERABILITY	CONSTRUCTION
W01 Andersen 400 (Vinyl Clad Wood)	+ all one color exterior into jamb track is nice + interior is nice + exterior looks good + simple sash profile on interior is nice - narrow vinyl visible - fat profile on exterior frame jamb	+ nice - tilt locks are fussy - locks too big - no sash lift	- sizes do not work well with brick dimensions - strange sash release tabs might break easily - awkward nailing flange - coating on exterior is vinyl?
W02 Eagle - Talon (DH with fixed top sash)	+ clean and attractive appearance + nice exterior appearance + vinyl jamb track is mostly covered + less hardware to break thanks to integral lock and tilt - grill is too wide and flat compared to others - interior appearance has too many lines and pieces	+ tilt release is very nice + inside handles are good + good sash locks and tilt operation + nice hardware + good size lift + nice double lock + tilt feature integral to lock, less pieces to break + tilt is easy to use	+ good - foam block at bottom of jambs will deteriorate
W03 Jeld-Wen - Builder (DH)	- thin profiles - complex exterior appearance at jambs - lower quality appearance - unattractive exterior and interior - very visible vinyl jamb track from exterior	- loose sash operation - no grips or hardware to lift - no sash lift at all - have to push in vinyl jamb track to tilt	- lower quality jamb liners may not last - hardware doesn't look strong enough - no weather-stripping in jamb track - bad joint at sill - wood at sill is a water problem - metal on wood sashes - open miter joints - seems very flimsy
W04 Jeld-Wen - Custom Collection Double (Single) Hung	+ nice interior and exterior + good wood and profile + extra casing is nice + looks good - joints very visible on exterior of sash	+ nice sash lock + ok, but no sash lift and tilt is bad - tilt tabs very small and hard to use - no sash lift at all - hardware clunky	+ jamb track is decent and weather-stripping on sash is good + sash is mitered - sash corners not ????? - very thin metal overlay in window sash - tilt locks are difficult to use
W05 Jeld-Wen - Premium Collection (DH)	- excess adhesive material at joints on sashes - vinyl jamb liner visible on exterior - tan vinyl with white window is not very attractive	*partial sample - can't test operation*	- metal overlay on wood sashes - strange foam seal at sill
W06 Jeld-Wen - Traditions Plus (DH)	+ exterior appearance overall is ok - interior sash grooves look strange - can see white vinyl liner from exterior - interior appearance has too many pieces to sash - vinyl jamb track visible - vinyl track makes window look lower quality - a lot of vinyl on jamb	- tilt mechanism ok to open but need to pull latches to shut - small integral sash lift	- lower quality thin vinyl jamb tracks - no sash weather-stripping - no dam at sill between wood and aluminum - lower quality hardware - thin metal overlay on wood sashes on exterior - tilt tabs tiny and not replaceable
W07 Kolbe - Ultra Series	+ looks very nice interior and exterior + classic look + good proportions + all wood jamb when lower sash is closed + no vinyl visible in jamb track when closed + no vinyl visible from exterior + nice exterior profile - fuzzy weather-stripping	- closes too easily - top sash has tilt but not easy to figure out - bottom sash has no tilt - no handle inside - sash lock is difficult - lock is hard to figure out	+ nice + wide casing option is nice + looks like tilt tabs are replaceable
W08 Loewen	+ very nice + most of vinyl track covered on interior + simple, clean lines on interior + nice exterior appearance - Low quality appearance to lock, too thin to hold up	+ tilt easy to use - no handle inside - hardware small - tilt tabs have to be pulled in to secure sash to lock in place - no sash lift	+ screen locks are metal pins, good for this type + tilt locks are nice - little foam blocks in jambs will disappear - tabs not replaceable - lower quality sash lock
W09 Marvin - Clad Ultimate CUDH3026 (DH)	+ handle is nice + very nice and classic + very nice interior and exterior appearance + very little vinyl visible in jamb track + looks good inside and out - narrow vinyl strip in jamb - handle could be more attractive	+ very good, solid feel + very nice lock and tilt, all one easy to tell if locked + separate metal sash lift - sash lift could be more ergonomic - tilt would be nice	+ good hardware + better weather-stripping + solid - wood seems soft grain - will it seal well?
W10 Pella - Designer	+ sash lift profile is nice - sash lift is plastic - integral shade looks lower quality - profile is clunky - jamb track - grill looks very low quality compared to other samples - vinyl jamb track very visible interior and exterior - unattractive appearance	- integral shade option is undesirable - don't bother with integral blinds - blinds are stiff and difficult to operate - top and bottom sash don't align when locked - hard to tell if it is locked	- plastic integral shade tab seems lower quality - sash cords could break or fail - sash lift is heavy - integral shade mechanism shaves wood off of jamb AL13d- lapped joints on exterior - cladding is break metal over wood
W11 Pella - Architect	+ fair and simple - lapped metal joints on exterior are crude - narrow sash profile - sash lift projects too far	- very stiff - no tilt locks? - very hard to open - tilting mech is very awkward	+ heavy duty sash lift + most of jamb track wood rather than vinyl - open and uneven miter joints - sash lift projects too far - cladding is break metal over wood
W12 Pella - Proline	+ fair - odd appearance rounded vinyl extrusions - thin wood profile - too much vinyl on interior jamb - looks lower quality - grills too thin - very narrow sash profile interior and exterior - very visible vinyl jamb track - vinyl jamb liner very visible on exterior	- rough, needs a sash lift (no sash lift provided) - have to press jamb liner to tilt window	- soft wood - hollow vinyl jamb track could crack and break - sash cords could break or fail - lapped joints on exterior metal - cladding is break metal on wood
W13 Weathershield - WS	+ nice looking + good interior and exterior profile - fuzzy weather-stripping - exposed vinyl jamb liner	+ ok + recessed pulls work well - tilt operation difficult - integral lift would be hard to lift on a large window - vinyl jambs are complicated	+ sill jamb works ok + no exposed wood + integral nailing flange - lower quality hardware - some thin vinyl sections - plastic tilt tabs not replaceable - thin metal extrusion over wood not self supporting
W14 Weathershield - Proshield (Vinyl Clad Wood)			
W15 Semco - Double Hung	+ nice exterior profile + recessed for shadow + grid is nicely proportioned - inside sash grooves don't look good - exposed vinyl jamb liner - a lot of vinyl on interior jamb	+ user friendly + good tilting mechanism + recessed pull works well + smooth operation - handles would work better than groove - groove looks strange	+ thicker metal extrusion at sashes - hardware is very small - cords in jamb tracks might break - hinge in jamb track is thin and might crack - no 'dam' at sill
W16 Marvin - Integrity(DH)	+ Ok - odd gap at meeting rail - thin profile - looks lower quality	+ good + hardware comfortable and easy to operate - screen hard to get in and out	+ hardware is good + decent weather stripping - sill flap on interior broke - interior gyp board receptor might limit options - sill piece on interior loose, could easily break - can tilt release tabs be replaced? - thin frame section - lower quality screen clips
ALUMINUM	APPEARANCE	OPERABILITY	CONSTRUCTION
A01 Graham - 2075 Series (SH)	+ nice clean lines interior and exterior + looks good - no profile for top fixed sash to mimic double hung from exterior - simplistic appearance but very thin exterior profile - frame is same as sash - stop blocks are clunky	+ full length sash lift + operates easily + sill sloped to exterior, no blockage + smooth operation (better than kawneer and traco) - no integral sill drain - bottom sash won't stay up	+ seems well constructed + good - top sash outside thermal break
A02 Kawneer - 8400	+ attractive exterior except screen track + nice wide sash profile + looks good - screen tracks and sash stops look tacked on - end of sash lifts unfinished and rough	+ full length sash lift - deep trough at sash sill hard to clean - top sash is operable, slides down too easily - both sashes loose	- sashes feel very loose in frame - lock seems undersized for heavy aluminum window - rough overall - has weeps but would be difficult to clean - top sash is outside of thermal break
A03 Peerless - 9130	- strange proportions of very thin top and bottom frame to wide sides - don't like screen track - clunky sash stops - very wide jamb profile - don't like projected screen	+ full width integral lift - strange deep trough at sill will gather dust, dirt, etc. - sash is very loose in frame	- sash sits crooked in frame - plastic sash stops, one already broken - lower quality plastic hinged covers over sill drains at exterior - sill does not seal well (possibly because of broken sash) - poorly finished water drainage cut into bottom of screen frame - big box cavity at sill hard to clean out - raw edges of sash lift - big empty cavity at jambs - operable sash is loose
A04 St. Cloud - SCW #920 (SH)	+ technical refined appearance - not "homey"	+ easy to operate + smooth and secure + you can ventilate in a heavy rain and not let water in - many layers of glass to clean - looks complicated - multiple steps to operate if no "come-along" installed	+ very well made + machined parts + durable locks on all sashes + integral sill drainage with sliding metal exterior covers + beautiful + great thermal break + very solid construction
A05 Traco TR 9100	+ clean exterior appearance + looks good - doesn't look as clean as kawneer from interior - totally utilitarian profiles, you don't get the look of a top sash - rough edges on lift sash	+ full length sash lift + easy, smooth operation + ok - sash not easily removable + locking mechanism works well	+ double walls at sill + sill drains cleanly to exterior + solid construction - corners on sash lock rough - thermal break is very minimal - top sash outside thermal break - big empty cavity in jamb - plastic insert for screen track
A06 Gerkin - Rhino (SH)	- Flat exterior appearance - Very narrow frame and sash profile - looks lower quality	+ sash lift at bottom and top of sash frame makes it easier to open - tilt sash feature has lower quality plastic tilt tabs	- very shallow frame depth and thin thermal break - sash cords are exposed at sash, only secured by knot at top - not durable
A07 Wausau Window 3101	+ Nice heavy, wide frame + appearance is more machined accurate than Traco or Graham + Screen frame is recessed at exterior, creates nice shadow line	+ Sash lift at bottom and top of operable sash makes opening window easier + Smooth operation - Deep sill trough hard to clean?	+ Well constructed
A08 DeVAC	+ Exterior appearance OK - Lots of visible fuzzy weather stripping	+ Sash lift at both top and bottom of sash + you can ventilate in a heavy rain and not let water in - Sash lifts are small - Sash falls freely between lock points when sash release lock tabs are released - plastic release locks on sashes make window harder to use (not intuitive) - will plastic parts last as long as rest of window?	+ aluminum parts assembled accurately - no protection against water infiltration into window at sill drains
VINYL	APPEARANCE	OPERABILITY	CONSTRUCTION
P01 Gerkin - 6100 (SH)	- very shallow frame depth - flat exterior appearance - no profile - exterior is unattractive - fuzzy weather-stripping - looks low quality	+ operates ok - sill drainage accomplished through gaps in sill screen frame - screen not easy to remove	+ vinyl sections reinforced with metal + integral nailing flange + good sash lock + half screen that is in a good frame and not easy to pull out - very thin vinyl sections subject to breaking - plastic tilt tabs not replaceable - cords in jambs susceptible to breaking and tampering -
P02 Pella - Thermastar Vinyl	+ wide sash profile + integral brick mold on exterior lends more traditional window look to frame + frame section more similar to typical wood window + easier to detail jambs - but also more material - low quality appearance to welds, excess material and loose at frame - sashes have thin lapped glazing stops	+ integral sill drainage (is it effective?) + works well - don't like the feel of papery, fuzzy weather-stripping	- shallow, thin integral lift - vinyl pieces holding glazing in place from exterior very thin and not welded - lower quality hardware - thin extrusions will crack - foam block in sill will deteriorate or get picked apart
P03 Thermal Line - 1090 (DH)	+ wide sash profile + exterior appearance okay for vinyl - too much hardware and devices on interior sashes - clunky frame and corner finishes - lower quality looking exterior profile - looks like a storm window	- hardware is awkward - integral lifts are too small - screen not easily removed - sash limit stops are fussy and don't work	+ thick PVC extrusions + durable metal screen frame + nice glazing stops on exterior of sashes - no integral nailing flange - screen projects beyond frame on exterior, held in place with flexible pieces - papery and fuzzy weather-stripping - crude joints - lower quality and fussy hardware
P04 Thermal Line - series 11 4000 (SH)	- strange rounded exterior profile of frame - sashes not visible from exterior - very flat appearance - protruding, simplistic exterior looks lower quality - unappealing on interior - interior sash lift	+ pull lift handle is easy to use - screen not easily operable - sash slides loosely - very flimsy operation	+ welds seem well constructed - lift handle prone to cracking off - plastic tabs to tilt sash for clearing seem fragile with no apparent way to replace - vertical sill piece for air infiltration not completely welded, water penetration possible - thin extrusions - papery, fuzzy weather-stripping - lower quality hardware
P05 Thermo Tech - 7100 (SH)	+ flush welds - thin profile of top sash from exterior and interior - poor exterior appearance - lapped trim at sashes has gaps - flat	+ integral sill drainage - hinged covers on sill drainage are fragile - sample wouldn't operate	+ window sash lift is good - but it could chip or break off - poorly detailed glazing stops on exterior - thin material and un-welded gaps - twin tilt tabs not replaceable - thin extrusions will crack - lower quality hardware and screen clips - lapped miter joints
P06 Vinylite - Diplomat (SH)	- flat exterior appearance	+ heavy full length integral sash lift + integral sill drainage - still breakage a possibility	- lock held in place by vinyl extrusion of top sash - plastic tilt tabs not replaceable - plastic tabs on screen breakable
P07 Vinylite 400 Series (SH)	- very thin exterior profile - extremely low quality appearance, thin, flimsy interior and exterior	- sash wobbles in frame - window does not stay shut without locking	- thin glazing stops on exterior - side loaded, so sash loose in track - very thin extrusions - plastic screen tabs will break - sash lift on top of sash will case stress on sash when lifted - cords to break or be tampered with - lower quality hardware, thin flaps on sash exterior with gaps - lift cable seems fragile
P08 Solaris - Star Series	+ architectural appearance to sash profile + exterior appearance more like wood + interior profile is nice + decent shape + good thickness and profile at sashes interior and exterior + 2 color option is nice + the fact that the jamb tracks aren't hollow is nice - center mullion too wide - don't like projected profile on exterior	+ integral full length lift + simple, positive sill drainage + good operation + tilt looks easy to use + works well - integral full length lift could break - weather-stripping	+ good welds + very nice seamless sill - sash lock looks lower quality - tilt tabs plastic and not replaceable
FIBERGLASS	APPEARANCE	OPERABILITY	CONSTRUCTION
F01 Accurate Dorwin	+ utilitarian in appearance - projected exterior profile negate desired shadow lines, how do you detail trim and siding? - interior hardware and profiles are unrefined - black lines of weather-stripping are distracting, weep cover on exterior are clunky	- hard to close, stiff operation - hard to operate tilt locks	+ metal lock and lift feel good, durable + tight joints in frame and sashes + integral sill drainage + looks like plastic tilt tabs can be replaced if broken + seems solid - very short, thin interior plastic sash seal and sill - screen tabs prone to breaking
F02 Marvin - Integrity (DH)	+ nice clean exterior profile - strange lip on interior lower sash - vinyl jamb liner very visible	+ operates OK - very difficult to tilt - no handles on interior	+ nice weather-stripping + tilt tabs replaceable if broken + good joints - lower quality screen and lock - thick vinyl in jamb tracks - integral lift handle in top of sash causes strain on sash frame when lifted
F03 Pella - Impervia	+ decent interior/ exterior appearance - except visible fuzzy weather-stripping - gap at meeting rail is odd	+ operates OK - except that top sash operates "awkward"	+ integral nailing flange + sill drainage - both screen and bottom sash poor fitting - open joints in frame - sash pull is integral (plastic) to sash, could be chipped off - hardware balance system, screen tabs and lock feel lower quality - very shallow frame section - raw edges