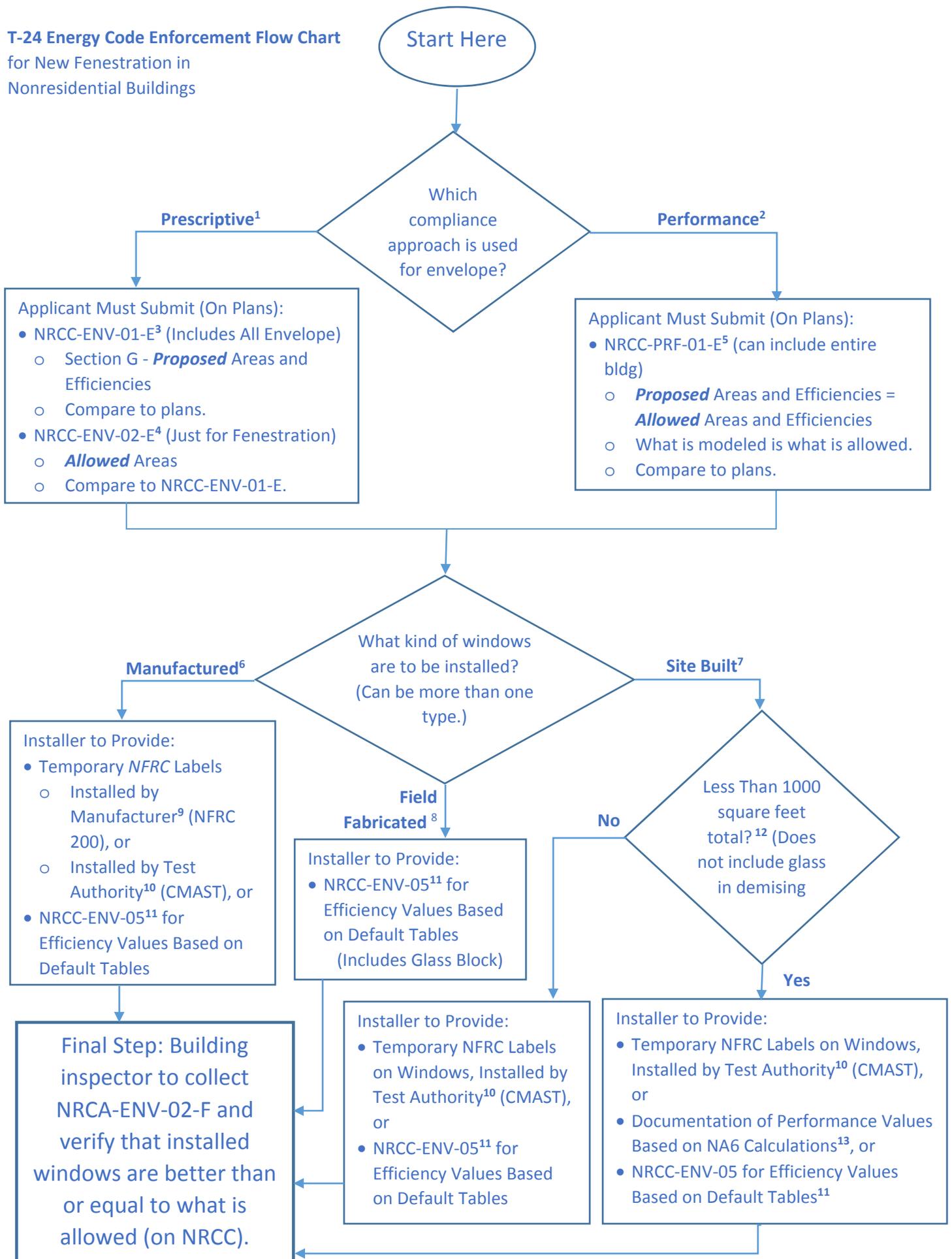


T-24 Energy Code Enforcement Flow Chart
for New Fenestration in
Nonresidential Buildings



Notes for Title 24 Energy Code Compliance Flow Chart for New Fenestration in NonRes Buildings:

1. Prescriptive approach is the simplified compliance approach that uses tables to determine the allowed energy features, rather than a computer simulation as used by the performance approach. If an NRCC-ENV-01-E is submitted, they are using the prescriptive approach. Note: Prescriptive and performance approach can be used simultaneously for different building components (envelope, lighting, mechanical) within the same building. This flow chart only pertains to the envelope portion.
2. Performance approach is the more complex compliance approach that uses a computer simulation of the actual building to determine if it complies. If an NRCC-PRF-01-E is submitted, they are using the performance approach. Note: Prescriptive and performance approach can be used simultaneously for different building components (envelope, lighting, mechanical) within the same building. This flow chart only pertains to the envelope portion.
3. NRCC-ENV-01-E: This is the worksheet that spells out how the proposed building’s areas and efficiencies for the entire envelope, not just fenestration. Section G pertains to fenestration. This information comes from the plans and should match the plans.
4. NRCC-ENV-02-E: This worksheet takes the information about the proposed fenestration and compares it to the allowed values (areas and efficiencies) from the Table 143-B, below. The information about the proposed building should match the NRCC-ENV-01-E.

CONTINUED: TABLE 140.3-B – PRESCRIPTIVE ENVELOPE CRITERIA FOR NONRESIDENTIAL BUILDINGS (INCLUDING RELOCATABLE PUBLIC SCHOOL BUILDINGS WHERE MANUFACTURER CERTIFIES USE ONLY IN SPECIFIC CLIMATE ZONE; NOT INCLUDING HIGH-RISE RESIDENTIAL BUILDINGS AND GUEST ROOMS OF HOTEL/MOTEL BUILDINGS)

		All Climate Zones					
			Fixed Window	Operable Window	Curtainwall or Storefront	Glazed Doors	
Envelope Fenestration	Vertical	Area-Weighted Performance Rating	Max U-factor	0.36	0.46	0.41	0.45
			Max RSHGC	0.25	0.22	0.26	0.23
		Area-Weighted Performance Rating	Min VT	0.42	0.32	0.46	0.17
		Maximum WWR%	40%				
Skylights			Glass, Curb Mounted	Glass, Deck Mounted	Plastic, Curb Mounted		
	Area-Weighted Performance Rating	Max U-factor	0.58	0.46	0.88		
		Max SHGC	0.25	0.25	NR		
	Area-Weighted Performance Rating	Min VT	0.49	0.49	0.64		
	Maximum SRR%	5%					

5. NRCC-PRF-01-E: This is the computer generated certificate of compliance that documents compliance. Because the actual building is modeled, the allowed features (areas and efficiencies) are the same as the proposed features, in other words the model should match the plans and the plans should match what is built.
6. Manufactured fenestration products are “off the shelf” windows and skylights that are shipped and installed as a complete unit. Nearly all major manufacturers have their manufactured products pre-tested and labeled in the factory.
7. Site built fenestration products typically consist of a factory built glass panel that is installed into a site built frame made out of material designed exclusively for that purpose.
8. Field-fabricated fenestration is a very limited category of fenestration that is made at the construction site out of materials that were not previously formed or cut with the intention of

being used to fabricate a fenestration product. No attached labeling is required for field-fabricated fenestration products, only a NRCC-ENV-05-E.

9. Temporary NFRC Label, Installed by Manufacturer (NFRC 200): This is the typical temporary paper label applied to most **manufactured** (“off-the-shelf”) window products. TIP: It is a good idea to let the installer and general contractor know NOT to remove the labels until the building inspector has verified them.
10. Temporary NFRC Label, Installed by Test Authority (CMAST): This is a temporary label applied to some **site built** windows when they have been specially tested (via computer simulation) by a third party, NFRC approved testing authority. Is allowed to be used on manufactured windows if they are not labeled by the manufacturer.
11. NRCC-ENV-05 for Values Based on Default Tables: When the performance values of the installed windows are based on the window default tables (Tables 110.6-A for U-factor and 110.6-B for SHGC). The windows should also have a label placed by the installer showing the default values. See example in Figure 3-3 of Nonresidential Compliance Manual. Use NA6 calculation method for visible transmittance (VT), if needed. Note: The default tables result in relatively poor efficiency values that will not pass most prescriptive requirements. This means that the performance compliance approach will be needed to show that these less efficient windows will comply.
12. Does the building have less than 1000 square feet of total glass area, not counting glass in demising walls?
13. Documentation of Performance Values Based on NA6 Calculations: For buildings with less than 1000 square feet of glazing (see note 12, above) the simplified NA6 calculation method can be used to document the efficiency values of the windows. This calculation adjusts the manufacturer’s center of glass values for the manufactured glass panel based on the type of frame that it is mounted in. See Reference Nonresidential Appendix NA6 – the *Alternative Default Fenestration Procedure*.