

and provide a recommended temperature to guide installers in proper application.<sup>56</sup>

#### Discussion of Stabilized Insulations for Use in Site-Built Home Attics

Because there is no consensus standard to apply to the testing of stabilized cellulose, the Commission does not plan to prescribe one in the Rule. The Commission is proposing, however, to amend the Rule to clarify that industry members must take settling into account in making their R-value claims for stabilized insulation. The Commission notes that industry members must have a reasonable basis for their claims. It is generally accepted that some settling occurs with these materials. Even though there is no consensus standard for measuring it, manufacturers must take settling into account and use reliable tests to back up their claims. Finally, the Commission notes that if there is information, such as drying times, that are important to the proper installation of the material in question, manufacturers should disclose that information. The Commission seeks comment on this issue.

#### iv. Loose-fill and Stabilized Insulations Used in Manufactured Housing Attics

The Commission's ANPR also asked whether the procedures currently used to determine the settled density of dry-applied loose-fill insulations or stabilized insulations when they are used in attics of site-built homes, are appropriate for determining their settled density when they are used in attics of manufactured housing. At issue is whether these insulations, which are installed in attic assemblies in a factory and then transported to the site where the manufactured home will be located, settle more, or differently, from those used in site-built homes because of additional vibrations and other factors during transportation. The Commission solicited comments regarding the extent of settling of dry-applied loose-fill insulations and stabilized insulations when they are used in attics of manufactured housing, the density at which the R-value of these insulations should be determined for use in attics of manufactured housing, and how that density should be determined. 64 FR at 48033–34.

#### Comments on Dry-applied Loose-fill and Stabilized Insulations for Use in Manufactured Housing Attics

NAIMA urged the Commission to adopt testing guidelines similar to the Department of Housing and Urban

Development Code and require over-the-road testing for all insulations installed in attics of manufactured homes. NAIMA doubted the accuracy of current methods used by the cellulose industry to judge the amount of settling of stabilized cellulose in attics of manufactured homes. NAIMA explained that the point of testing is the manufactured housing plant, before the fully constructed home is transported via truck or train to its final destination, and that the disturbances inherent in such transportation tend to alter the level of the cellulose, and thus its R-value.

According to NAIMA, rock wool and slag wool manufacturers rely for their claims on independently conducted third-party-witnessed over-the-road evaluations designed to measure the impact of the effects of transportation on installed rock wool and slag wool insulations. NAIMA contended that cellulose manufacturers did not conduct such over-the-road tests until 1997, when HUD required them to do so. NAIMA stated that, although CIMA has been working with HUD to resolve the issue, NAIMA cannot find evidence that CIMA and its members have rectified the alleged deficiencies in their testing approach to HUD's satisfaction. Accordingly, in NAIMA's view, the durability of thermal performance claims of stabilized cellulose in manufacturing home attics remains unsubstantiated.<sup>57</sup>

#### Discussion of Dry-applied Loose-fill and Stabilized Insulations for Use in Manufactured Housing Attics

The Commission does not propose to amend the Rule to address the particular settling issues associated with loose-fill and stabilized insulation in manufactured housing attics because, at this time, no industry consensus procedure exists. Nevertheless, the Commission reminds industry members that they must substantiate their product performance claims. Accordingly, all manufacturers of loose-fill and stabilized insulation in manufactured housing attics must take into account, as accurately as possible, any significant effects associated with transporting units from the manufacturing plant to the home site. The Commission's staff is aware that HUD has raised issues concerning these materials with industry members as part of that agency's regulatory program for manufactured housing. No specific HUD code or standard has been identified that would be appropriate for

incorporation into the R-value Rule in this context.

#### b. Loose-Fill and Self-Supported Insulations in Walls

The ANPR explained that dry-applied loose-fill insulations and spray-applied, self-supported insulations can be installed in walls in residential applications. Dry-applied loose-fill insulations normally can only be applied in existing wall cavities (primarily in retrofit applications). If they are not sufficiently compressed during installation, these insulations may settle when blown into a confined area, such as an enclosed wall cavity, leaving a gap at the top of the wall cavity. Manufacturers who claim an R-value for a dry-applied loose-fill insulation must disclose the R-value at the applied density, determined according to the R-value test procedures specified in the Rule. The Rule, however, does not specify how manufacturers must determine that density in wall applications because there was no standard procedure for measuring the applied density for all product in that context when the Commission promulgated the Rule.

Self-supported, spray-applied insulations, mixed with water and adhesives, are installed pneumatically on-site by professional installers. They may be made of either cellulose or mineral fiber. When applied, this form of insulation requires no support other than the insulation itself or the substrate to which it is attached. These products most often are used in walls in commercial applications, where they may be left exposed after they are installed. They are rarely used in residences, primarily because this application requires the use of more insulation material for a given thickness (*i.e.*, the insulation is installed at a higher density and cost), often without any increase in total R-value, and sometimes at a reduced R-value. They are not used in attics because of their additional weight and cost. Because these products are applied at a greater density than either dry-applied loose-fill or stabilized insulations, they are not likely to settle.

The Commission explained that, although self-supported, spray applied insulation was not discussed during the original rulemaking proceeding and the Rule does not specify how R-value test specimens must be prepared, it is covered by the Rule if it is sold for use in the residential market. Because the density at which these insulations are applied affects their R-values, the Commission's staff has advised industry members that they should prepare test

<sup>56</sup> NAIMA (9), pp. 14–16.

<sup>57</sup> NAIMA (9), pp. 16–17.