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HUD/FHA Carpet Requirements

For many years the carpet industry has relied on quoted standards outlined by the Housing and Urban Development/Federal Housing Authority agencies. These standards, which are defined in the HUD Building Products Standards and Certification Program for carpet, have served as a quality control guideline and performance criteria requirements for new carpet production. These requirements, which first appeared in 1970, are currently listed under the HUD/FHA document " Use of Materials Bulletin No. UM 44d, (which is updated every seven years). Relative to UM 44d, of importance in this newsletter are the Types and Classes of Carpet, Requirements and Test Methods, and Minimum Weight and Density requirements for Type I and Type II.

Types and Classes of carpet are used to define (1) the **Type** of end use (**Single & Multi Family Housing, Elderly & Care Facilities**) and, (2) the **Class**, which is used to determine the expected traffic loads a carpet will be subjected to (**Moderate and Heavy**) in the installation Type.

Type I–Single Family and Multiple-Family Dwellings
Class 1. Moderate traffic
Class 2. Heavy Use

Type II–Housing for Elderly and Care-Type Housing
Class 1. Moderate traffic
Class 2. Heavy traffic. Corridors and exits outside living units are restricted to single level pile.

Next up is the table for **Minimum Weight & Density Requirements** for **Type I-Single & Multi-Family Housing, Class 1 and 2**. Although these requirements cover a wide-range of carpet constructions, the purpose here is to give some examples of these minimum requirements.

CLASS	TEXTURE	BCF NYLON		BCF POLYPROPYLENE		STAPLE POLYESTER	
		Wt.	Density	Wt.	Density	Wt.	Density
Class 1	Level/ textured loop	20	3300	20	3600	N/A	
	Cut-Pile Heat Set Plied	24	625	32	2800	32	1500
Class 2	Level/ textured loop	26	4000	26	4350	N/A	
	Cut-Pile Heat Set Plied	30	1400	32	4500	40	1920

Some examples of **Type II Elderly & Care Facilities**, **Class I and 2** minimum requirements.

CLASS	TEXTURE	BCF NYLON		BCF POLYPROPYLENE		STAPLE POLYESTER	
		Wt.	Density	Wt.	Density	Wt.	Density
Class 1	Level/ textured loop	20	3300	20	3600	N/A	
	Cut-Pile Heat Set Plied	24	1250	32	4000	32	1550
Class 2	Level/ textured loop	26	4000	26	4350	N/A	
	Cut-Pile Heat Set Plied	32	3600	32	4500	N/A	

When qualifying a carpet for a particular end use one must consider that although HUD/FHA allows for a plus/minus of 7% variation between the carpet's specified pile yarn weight compared to the pile yarn weight of the actual finished carpet, this tolerance does not apply to those carpets with a pile yarn weight that equates to the HUD/FHA minimum pile yarn weight requirements. As an example, the finished pile yarn weight of a 24 oz. BCF nylon cut-pile must be no less than 24 oz., whereas a 26 oz. BCF nylon carpet could finish at 24.18 oz. and still be considered within spec.

Another consideration pertains to carpets consisting of pile yarn blended yarn construction. When these carpets are specified, the pile yarn with the highest percentage content determines how the carpet construction (not weight) is to be interpreted. If, as an example, a cut-pile carpet made from 70% BCF nylon and 30% BCF polypropylene (olefin) was being specified, this carpet would be interpreted as nylon.

To determine the minimum pile weight requirements in a blended yarn carpet multiply the percent of each yarn by the minimum requirements for the yarn type listed in the respective Type and Class. In the aforementioned examples this blended yarn carpet used for Type I Class1 installation would be calculated by:

Nylon	0.70 x 24 = 16.8 oz sq. yd.
Polypropylene	0.30 X 32 = 9.6 oz sq. yd.

In this example, the total minimum pile yarn weight requirement for this blended yarn cut-pile carpet would be 26.4 ounces. Since this would be the minimum pile yarn weight there would be no minus tolerance allowed.

Average Pile Density can be estimated by multiplying the pile yarn weight oz sq. yd. by 36 divided by the carpet's pile height. As an example, a 24 oz sq. yd. carpet with a pile height of .250 can be calculated as such:

24 x 36=864 divided by .250=3,456 Density

Requirements and **Test Methods** for carpets list the minimum carpet performance criteria used by carpet manufacturers as a quality control measuring stick for most carpets in general. Carpets that meet these minimum standards are considered to meet industry standards for ordinary use as well as being in compliance with HUD/FHA requirements. The test methods and criteria listed below are examples of the minimum HUD/FHA requirements for carpet.

Characteristics	**Value**	**Test Method**
Pile Yarn Weight oz. sq. yd.	See Types and Classes	ASTM D 418
Density oz. sq. yd.	See Types and Classes	N/A
Tuft Bind	6.25 lb. loop 6.25 lb. cut & loop 3.0 lb. cut pile only	ASTM D 1335
Delamination Strength	2.5 lb.	ASTM D 3936

Although the HUD Building Product Standards and Certification Program for Carpet, UM44d makes no reference to carpet flammability requirements, this information can be found in the Federal Register. However, the best source for this information is the state and local Fire Marshall. These are the sources we recommend dealers contact prior to selecting a carpet for a particular end use whenever carpet flammability requirements have not been previously specified by the builder, architect, or facility manager.

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