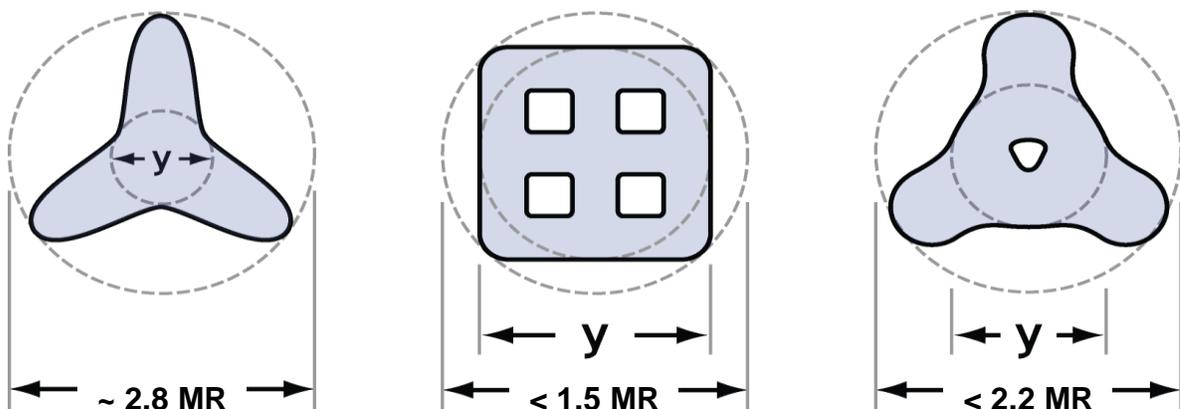


# TECHNICAL BULLETIN

## Modification Ratio

There is an industry-recognized measurement that describes a fiber shape, called the modification ratio (or MR). Knowing the MR of a fiber shape can help carpet specifiers determine which fiber shapes may hold more soil between cleanings, and which shapes may hold less.

To calculate the modification ratio of a fiber shape, the size of the outer circle's circumference of the fiber is compared to the size of the inner circle's circumference. The larger the ratio, the greater likelihood that the fiber shapes can trap and hold soil and might experience premature crushing and matting. An MR of <2.2 is recommended for medium to high soil areas and an MR of <1.5 is recommended for high to very high soil areas.



$$\text{modification ratio} = \frac{x}{y}$$

The illustrations above show some typical MRs found in commercial carpet today. The example on the left is a higher-MR trilobal fiber shape. You can see that the outer circle is much bigger than the inner circle. The larger the ratio, the greater the likelihood that dirt can be trapped in the crevices between the lobes and be difficult to remove with cleaning. The fibers in the middle and on the right are two of the Antron<sup>®</sup> nylon hollow filament fiber shapes. The four hole hollow filament fiber in the middle has an MR of <1.5 and a smooth outer surface with no grooves that can enhance soil release with vacuuming. The four holes, which run the entire length of the fiber, diffuse the light and provide soil hiding in between cleanings. The fiber on the right is a modified delta hollow filament with an MR of <2.2 and a unique shape that improves color clarity. The specially-shaped hollow filament runs the length of the fiber and works like the four hole hollow filament shape to diffuse light and reduce the appearance of soil.

Can dirt get into the holes of the hollow filament fiber? The holes are approximately one ten thousandth of an inch so this cannot happen! Dirt particles are much, much larger.

Antron<sup>®</sup> carpet fiber shapes feature some of the lowest MRs in the industry. This means that they can minimize soil accumulation, making cleaning easier. When a carpet retains its appearance longer, it will stay newer looking longer and its usable life may be extended.

**For more information, visit our web site at [antron.net](http://antron.net).**

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*\*All test results and claims made in this technical bulletin are based upon a representative sample of carpets manufactured and sold in North America. Individual results may vary.*