

KOTHEA

Martindale Rub Test

Designer's Worksheet

Martindale Rub Test results are used to check fabrics for their durability and suitability for various uses such as domestic furniture and contract furniture. The test is also known as the Rub Test and it tests for abrasion.

The test gives a score in 1,000's of 'cycles' or 'rubs'. Domestic fabrics often have a rating of 20,000 rubs. Generally, the higher the Martindale Score the more suitable the fabric for heavy usage. For example several [KOTHEA velvets](#) and [Faux Leathers](#) have scores of over 100,000 making them usable for heavy contract scenarios as a [hotel fabric](#).

The Martindale Rub Test is commonly used in the UK and Europe. In other countries, such as the USA, a similar but different test known as the Wyzenbeek test is used. The term 'double rub' is commonly equated with the Wyzenbeek test. You can view further information about the Wyzenbeek test by [more...](#)

The technical details of the Martindale test are shown below but this information is not normally required to be known by an interior designer:

"A circular specimen, mounted in a specimen holder and subjected to a defined load, is rubbed against an abrasive medium (standard wool fabric) in a translational movement tracing a Lissajous figure, the specimen holder being additionally freely rotatable around its own axis perpendicular to the plane of the specimen. The normal end point of the test is when two threads are broken or in the case of pile fabrics when the pile has completely worn off. The inspection interval is dependent on the end point of the fabric and is usually every 1,000 up to 5,000 rubs, every 2,000 between 5,000 & 20,000 every 5,000 between 20,000 & 40,000 and every 10,000 above 40,000."

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Using The Martindale Rub Test To Specify Fabric

If you are specifying upholstery fabric (critically so) in a contract environment then look closely at the Martindale or rub test rating of your fabric. This measures abrasion and simulates 'wear and tear'.

The following is taken from BS 2543 and shows the 'intended duty' of the fabric:

OD = Occasional domestic – 6,000 rubs

LD = Light domestic – 15,000 rubs

GD = General domestic – 20,000 rubs

HD = Heavy domestic – 25,000 rubs

SD = Severe domestic/general contract – 30,000 rubs

SC = Severe contract Abrasion performance – 40,000 rubs

Inferring Martindale Rubs From Wyzenbeek Double Rubs

Despite what you will read on other web sites including the sites of some of the best known fabric houses in the world **you simply cannot infer a Wyzenbeek score from a Martindale score** or vice versa.

However for Heavy Duty usage you might specify: 30,000 double rubs Wyzenbeek method OR 40,000 cycles Martindale method. So in that sense you can say that for a certain level of usage the Martindale result needs to be 33% higher than the Wyzenbeek. But you CANNOT say that if a fabric scores 100,000 Wyzenbeek then there is no point in undertaking a Martindale test as you "know" its result would be 133,333 – ***that would simply be wrong***; the Martindale could be higher or lower, you have to test it.

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What Property Gives A Fabric A Good Martindale Score?

The strength of the fibre in the yarn is one factor, stronger fibres give stronger yarn.

Lengths of the individual fibres are also important. Particularly short fibres give a weaker yarn. But particularly long fibres probably give little extra strength compared to long ones.

When fibres are woven into yarns they are twisted and this twisting gives additional strength. Think of huge steel cables used on bridges if that helps. You will see how the wires are twisted around each other and then these are twisted around similar ones to give high strength cables. Exactly the same principle applies with fabric. With a greater number of twists per unit of length the stronger a yarn becomes.

So now that we have a strong yarn, we use a variety of weaves to make fabric. The nature and type of weave affects the strength of the fabric. It is VERY hard to generalise but imagine a tightly woven fabric – that **probably** will have a good abrasion resistance IF made from strong yarn. But you can't generalise and so that is where the Martindale Test comes in.

It is the job of the fabric company, i.e. the likes of [KOTHEA](#), to provide you the designer with the Martindale results of the fabric and to organise that testing. However the job of the designer is to understand the full implications of the physical and aesthetic properties of the fabric when specifying it in their scheme. So as well as abrasion resistance you will need to understand, colour fastness and, importantly, fire retardancy as well as other fabric properties, such as shade change.

Continued...

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Resources:

Verity du Sautoy,

Marketing At KOTHEA - <http://www.kothea.com/>

Designers' Fabric Knowledgebase – <http://blog.kothea.com/>

Source: [Variety of blog posts 2009/2010](#)

Related Design Resources: [Fire Retardancy, shade change, velvet upholstery, colour fastness in fabrics.](#)

Top market fabrics for the leading interior designers and architects. Exceptional quality, inspiring designs, extensive colourways. Core fabrics products for your design scheme: extended neutrals; striking designs; technical fabrics; professional support and guidance for fabric specification and treatment.

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