

Quick Links

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[Safety Data Sheets \(SDS\)](#)

Some of these links lead to web-based resources that are not product-specific.



The most common description of the appearance of a flooring surface is gloss. However, using only gloss to describe a floor describes only a portion of how it will appear. Two floors may have an equal gloss but a very different appearance. To fully describe a floor, we need to consider more than just gloss.

What is gloss and how is it measured:

Gloss is a term used to describe the “shine” or light reflection of a flooring surface. Typical gloss meters measure gloss by projecting a beam of light onto the floor and measuring the amount of that light reflected back at the same angle within a +/- 0.9 degree range. Because gloss readings are taken using a range, there will be variations of appearance between samples that give the same gloss reading. We could refine that range and get a better description. That measurement is called Peak Specular Reflectance.

What is Peak Specular Reflectance (R_{Spec}):

R_{Spec} is measured in the same way as gloss but uses a very tight range of +/- 0.15 degrees. Two surfaces may have the same gloss reading but a greatly different R_{Spec} . The higher the R_{Spec} reading the more perfectly light is reflected. This reading gives a better indication of the floor appearance but can be further refined.

What is Distinctness of Image (DOI):

Distinctness of Image (DOI) is a measure of how crisp and sharply a reflected image appears. For example the ability to see a bright spot reflected in a floor as compared to being able to clearly see the outline of a light bulb or being able to read text in a reflected sign. Distinctness of image is an indication of the perfection of a reflection and lack of haze or orange peel in a surface. The picture used at the top of this Tech Talk is an example of a floor with a very high Distinctness of Image. In effect, a high DOI measurement tells us that light is perfectly reflected and only small amounts of light are reflected in angles close to perfect (which would cause a fuzzy image). Due to advances in portable meters, DOI is now being used in the field to measure the quality of floor coatings.



NOTE: The above picture shows two uncoated concrete tiles with similar 60° gloss (42 left and 49 right) but a different DOI (27 left and 75 right). Notice how the reflected lights are clear in the right hand tile and only a blurred image in the left tile.

How does DOI affect the use of 3M™ Trizact™ Diamond TZ Abrasive Pads and Scotchgard™ Floor Protectors?

One of the major benefits of using 3M™ Trizact™ Diamond TZ Abrasive Pads prior to the application of a floor coating is a dramatic increase in DOI. Because Scotchgard™ Stone Floor Protectors are applied thin, it does not “orange peel” and is able to maintain the smoothness and DOI of the Trizact™ Diamond TZ Pad prepared flooring, while enhancing the gloss. Floors that have similar traditional gloss readings will have a better perceived appearance with the increased DOI provided by use of 3M™ Trizact™ Diamond TZ Abrasive Pads than those without. The following two images are provided to demonstrate the enhanced appearance of surfaces with similar gloss and different DOI values.



NOTE: The flooring on the left in the above picture was prepared using 3M™ Trizact™ Diamond TZ Abrasive Pads and has a 60° gloss of 78 and a DOI of 71. The flooring on the right was not prepared with 3M™ Trizact™ Diamond HX Discs and has a 60° gloss of 74 and a DOI of 43.



NOTE: In this image the concrete toward the front has a 60° gloss of 16.3 and a DOI of 80.9 with clearly reflected overhead lighting. The area in the rear has a 60° gloss of 16.4 and a DOI of 27.5 with overhead lighting visible only as a blur.

Health and Safety

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When using any equipment, always follow the manufacturers' instructions for safe operation.

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