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August 11, 2021

Attn: General Distribution

From: Applications Engineering

Subject: Garlock premium grade rubber sheet surface finish

The cloth finish on Garlock rubber sheet is a source of questions at times. Specifically does the cloth finish impact the performance of gaskets cut from the material? Also, why does the product have this type of finish?

The cloth finish found on Garlock premium grade rubber sheet is the by-product of a very important processing step that many lower quality rubber sheet producers will rush past or eliminate completely to make the finished product cheaper. This process is called vulcanization and it adds integrity to the rubber so that once formed (whether as a molded part or sheet), the material has certain desirable properties like recovery, flexibility, and/or durability. When rubber sheet is not properly vulcanized or cured certain properties like tensile, elongation, and compression set tend to suffer.

One of the key properties mentioned is “compression set”, which means when it’s deformed (like in a flange), the material does not recover well when movement occurs in the flanges. Without good compression set properties the product will not have the resiliency quality rubber products are known for.

The cloth finish found on Garlock premium grade rubber sheet is often referred to as a “satin finish” because the texture is so fine. The finish is created by a NYLON fabric or “carrier” that is wound between the layers of rubber as it is rolled up in preparation for the vulcanization process. This layer not only prevents the rubber material from sticking together, but it also aids in even heat transfer across the surface of the rolled-up material during the curing process. Once fully cured the rubber is unrolled, and the NYLON carrier is removed. Since the surface texture left by the NYLON is extremely fine it should have no impact on the material’s ability to perform as a gasket when properly compressed.

The more important question may be: “How well is the lower cost “smooth” rubber sheet vulcanized?” The key indicators of this poor processing could be sticky to the touch material surface, it’s flimsy when handled, and may even have an oil-like odor for the heavy load of plasticizer oils used.

Rubber sheet is like many things in life...if it’s cheap, you’re probably getting what you paid for.