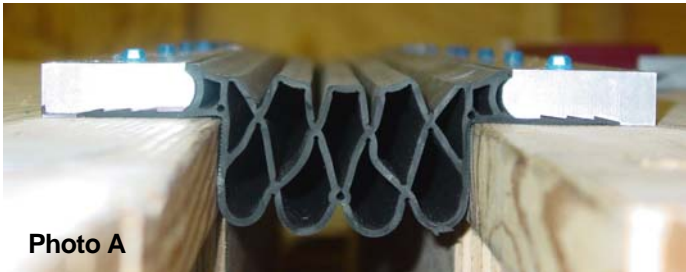




TECHNICAL BULLETIN 107

Subject: Expansion Joint Rubber Hardness compared to Mass & Density



Elastoprene Rubber Seal shown in a relaxed uncompressed condition.



Elastoprene Rubber Seal shown in a partially compressed condition.

MM Systems utilizes seal sizes that are wider than most products in the market in order to create more mass and rubber density. That is why MM Systems elastoprene rubber seals are sized as 250, 350, 450 and 550 each a half size larger than most other seals. This provides greater movement (an insurance policy for property owner) and greater firmness for pedestrians walking over the seal.

The best comparison for firmness under foot would be a real life compressed seal inserted and bonded into place (Photo B). Comparing small 6-inch unstalled or uncompressed samples (Photo A) does not provide an accurate comparison. Most rubber seals are extruded to a Shore A / 60-65 durometer hardness.

Confusion exists between rubber hardness and firmness under foot. Increasing a seal's durometer or thickening the seal's web walls can change rubber hardness. However, if the rubber durometer (hardness) is increased then the seal may have difficulty compressing when temperatures fall below freezing. Additionally, increasing the web wall thickness creates difficulty installing the seal into the expansion joint opening and reduces movement capability.

The ideal solution is to design seals that are wider than is normally required. In addition, the seals are designed with mechanical hinges engineered into the profile allowing the seal to fold without generating restrictive forces that would prevent it from compressing to its maximum potential. This combination creates a dense seal that is firm under pedestrian foot traffic. It also provides additional movement capability in the event that the expansion joint gap opens beyond the published (expected) maximum.

Many MM Systems seals are also available in Heavy Duty (HD) Series or Low Profile (LP) Series. The LP Series is used when the concrete deck thickness is shallow and fire barriers are required or if conduit is running through the deck. Contact MM Systems for more information on the best solution for your next project.

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