

## Theater Engineering Conference

### Floor Coverings

# Carpet Wear Increased with Sponge Rubber\*

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*Summary*—As is well known, sponge rubber as such, has been in use for many years in a variety of articles. And like so many other things made of rubber, great strides have been made in scientifically improving its compound to suit different conditions and circumstances.

FOR MORE THAN ten years sponge rubber in sheet form has been used as a carpet cushion until today a very large percentage of the production of sheet sponge rubber is used for this purpose. Repeat orders from the same users who started with it ten years or more ago prove conclusively that sponge-rubber cushions make carpets wear longer.

There are several reasons for this. First, rubber recovers or returns to its original thickness completely, whereas under pounding heels, other materials, such as hair lining or hair and jute, mat down. The mere fact that sponge rubber recovers its height completely and continuously naturally protects the carpet no matter how much pounding it receives. Second, in order to accomplish that super-lush softness many theaters resort to extra thick padding, with the result that people's feet sink too deep and since most of us do not lift our feet very high in our natural stride, the shoes scrape the carpet surface slightly thereby causing unnecessary wear on the carpet surface.

While produced in thicknesses of from  $\frac{3}{32}$  to 1 inch, for average locations, the carpet cushion in  $\frac{1}{4}$ -inch thickness is recommended and for areas where extra thickness is desired  $\frac{3}{8}$ -inch thickness is ample. It is produced in rolls of approximately 20 yards in 36- and 53-inch widths.

When used on stairs sponge rubber has extended the life of carpets,

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especially at the edge where the wear is greatest. A report issued recently by an outside testing laboratory regarding the results of tests conducted on different types of padding states: "There have been a number of inquiries recently about the efficiency of sponge rubber as a carpet underlay *versus* other underlay products. Our laboratory has forwarded information which summarizes tests made on installations of stair carpet using different underlays. Eight underlays were tested including three jute, two jute-hair, one cotton-paper, and two sponge-rubber underlays. As compared to an installation without underlay it was found that a jute-hair underlay of 0.42 inch in thickness gave the same increase in wear to the carpet as a sponge-rubber pad of 0.23 inch in thickness. However, during the test the sponge rubber maintained its thickness whereas the jute-hair pad reduced in thickness nearly 50 per cent. When the jute-hair pad mentioned was reused the increase in the carpet's wear life as compared to carpet without underlay was only about one half of the increase obtained when the new jute-hair pad was used. As shown by this test it is undoubtedly preferable to install new padding than to reuse the old. Because sponge rubber maintains its thickness under use and reuse it has a distinct advantage in this characteristic."

This sponge rubber is compounded of crude rubber and comes in black with a red marbled design. The odor of rubber has been removed and a faint pleasant aromatic scent has been added. It is easily laid directly to the floor, and can be bonded with the usual water-soluble glue. The edges are trimmed square and can be abutted with a pressure adhesive tape. The carpet laid over it should extend about  $\frac{3}{4}$  inch beyond the edge of the sponge-rubber underlay and anchored in the conventional way.

Sponge rubber has unusual gripping qualities and prevents carpets from slipping and creeping. This is especially noteworthy since most aisle carpets have a tendency to bunch up at the foot of the aisle. Sponge rubber anchors the carpets and prevents this common difficulty.

Carpets can be cleaned better and easier since grit cannot get into the sponge rubber and whatever does filter through the carpet goes no farther than the surface of the sponge and most of this is drawn out with vacuuming.

Also, sponge rubber is repulsive to vermin. There is nothing to feed on nor is there any way for vermin to get into it, the skin surface is impermeable and the pore structure is only partially porous.

Attention is drawn here to a very important point. You will note that this product is referred to as sponge rubber. The spongy pore structure of this product is accomplished with chemicals which react on the rubber in the curing process causing it to expand and form pores within the stock. These pores are only partially interconnecting—and both surfaces—there is no right or wrong side—are impermeable. This is as it should be for undercarpet application. Particular attention should be given to the difference between this chemically blown sponge designed for undercarpet cushions and foam rubber. While this could be called sponge rubber too, it is never referred to as such because of its totally different characteristics. Foam rubber is completely different from any other class of rubber in that it is porous through and through. The pores within the stock are entirely interconnecting, and both surfaces are also porous. You can blow air and smoke through it and you can pour water through it. Because of this extreme porosity it is ideal for seating, mattresses, and pillows, since it easily dissipates body heat.

The chemically blown sheet sponge rubber designed for carpet underlay has been in use in theaters, hotels, and Pullman cars since prewar days and as a result has grown remarkably in popularity. Where it came in contact with heater pipes along the edge of Pullman cars it had a tendency to crystallize slightly but the migration of this crystallization was confined to within an inch of the edge of the rubber and when rehabilitation work was necessary on the cars, no sponge-rubber cushioning was required to be replaced.

This product is now in production and is currently available throughout the country.