



The Magic Eraser made from Basotect® W

Case Study

The Magic Eraser made from Basotect® removes even stubborn grime

Dirt is a big nuisance. A scientist would call it “material in the wrong place”. Over the centuries, innumerable domestic remedies have been found to combat the myriad forms in which this troublesome material dirt appears: from salt for red wine stains to baking powder for removing dirt from the joints between tiles. Despite their huge diversity, all these methods are based on only two principles: chemistry – as an aid to dissolving dirt – contrasting with the mechanical cleaning principle. This category also includes the “Mr. Clean Magic Eraser” made by Procter & Gamble. Outwardly, the dirt eraser made from BASF’s melamine resin foam Basotect® resembles a normal sponge. When lightly moistened, however, it seemingly develops magical properties. From encrusted dirt on stovetops to crayon marks on the wallpaper: even set-in grime can be removed in a trice – without the need for prolonged scrubbing.

The structure and properties of the foam

To understand the astonishing capabilities of the Magic Eraser, we have to take a closer look at the special properties of Basotect®. “On curing, melamine resin becomes almost as hard as glass”, explains Dr. Christof Möck, responsible at BASF for the Global Business Management of this special foam. “The hardness of this material is one of the secrets of its cleaning talent: like extremely fine

sandpaper, the foam eraser rubs the particles of dirt from the surface.” Basotect® still manages to remain soft and supple thanks to the fine structure of the foam created by foaming the resin. Unlike rigid polystyrene-based foams such as Styropor®, open-cell foams have interconnected air chambers. In the case of Basotect®, only the cell strands formed when several cavities impinge on each other remain. What looks under the electron microscope like foam on bath water is actually a finely structured three-dimensional network consisting of extremely slender and therefore flexible plastic filaments. The large, almost freely accessible surface produced by this airy structure binds the abraded particles of dirt and contributes to the eraser’s astounding grime-removing capabilities.

This effect can be achieved on a wide variety of surfaces such as tiles, ceramic stovetops, ceramics, doors, leather seats and automobile wheel rims – and all without adding detergent. A little water is all that is needed to moisten the Magic Eraser. Even the most ingrained dirt cannot resist the glass hard microstructure of melamine resin. Only surfaces liable to scratching and varnished surfaces should not be cleaned with the “magician”.

