An improved lightweight padding device for heavy equipment with improved corrosion protection and abrasion resistance wherein the padding device has a planar top, a planar bottom and four sides perpendicular to the planar top and planar bottom and the outer surface is composed of a two part elastomer of polyurea. The interior of the device is composed of expanded polystyrene.
PADDING DEVICE FOR HEAVY EQUIPMENT

REFERENCE TO PRIOR APPLICATION

[0001] This application claims the priority of provisional application 60/840,316, filed Aug. 24, 2006 entitled IMPROVED PADDING DEVICE FOR HEAVY EQUIPMENT by Richard Bell.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention
[0003] The present invention relates generally to the field of padding devices for heavy equipment.
[0004] 2. Description of the Prior Art
[0005] Equipment pads are known in the art to provide a safe place to place heavy, sensitive equipment, particularly equipment used in the HVAC and air conditioning industries. Typically, these pads are heavy, difficult to move and complex in their construction.
[0006] The present invention seeks to overcome the limitations of the prior art by providing a sturdy, corrosion resistant pad that is lightweight and simple.
[0007] U.S. Pat. No. 5,664,394 to Sweeney describes an equipment base or pad that includes a rigid board of expanded polystyrene and top and side surfaces of a reinforced coating of polyurethane bonded to a non-woven fabric. This invention is covered with cement, making the device extremely heavy.
[0008] U.S. Pat. No. 5,143,768 to Wildeman et al. teaches a dieboard/board for supporting sheets at a die punch formed of a layer of polyurea-cellulose and a surface layer of polyvinyl chloride. This invention is a transformer pad that has inserts in it. It is a laminated die board structure and is not designed for production or construction. It is very complex in its design.
[0009] The instant invention wishes to fill the need for a simple, strong and lightweight equipment pad that does not exist in the prior art. Expanded polystyrene is used for strength and lightweight characteristics on the interior of the invention. Expanded polystyrene is a generic term for polystyrene and styrene copolymers that are expanded into a variety of useful products. It is supplied to molders in the form of a polystyrene bead. These beads are loaded with a blowing agent, usually pentane, and other chemical agents and additives that give the beads expansion viscosity and allow them to be processed and molded into low-density foam articles.
[0010] Expanded polystyrene has shock absorbing qualities; it is a low-cost material and it has high insulating properties. It has attractive cushioning characteristics, dimensional stability and thermal and moisture resistance. Expanded polystyrene has been described by Sweeney in the 394 patent, but the 394 patent suffers in mass because it is covered with cement.
[0011] To overcome this shortcoming, the instant invention utilizes a polyurea elastomer to coat the expanded polystyrene core, giving it abrasion and corrosion resistance while maintaining its lightweight state.

SUMMARY OF THE INVENTION

[0012] An improved padding device for heavy equipment is disclosed comprising an interior portion composed of expanded polystyrene and an exterior portion. The exterior portion further comprises a planar top surface, a planar bottom surface, four side surfaces, with the side surfaces being perpendicular to the planar top surface and the planar bottom surface wherein the exterior portion is coated with a two part elastomer of polyurea for corrosion protection and abrasion resistance.

[0013] Polyurea elastomers are relatively new to the materials field. They have been formulated to produce high performance, rapid curing coatings and caulks that can be applied in adverse climates that would normally inhibit the use of other conventional chemistries. It is the inherently rapid reaction rate of isocyanates and amines that allows for the unique gel and cure rates that enables the consistent application of polyurea elastomer over a broad temperature and humidity range.

[0014] The many successful case histories and the truly unique performance and processing characteristics of polyurea have made it a technology that can compete in niche areas once exclusively held by the more mature coating systems. In many cases, polyurea coatings and polyurethane coatings are mixed together. Thus, polyurethane coatings have become a generic term for coating systems based on polyisocyanate reaction.

[0015] Polyurea coatings normally use amines as co-reactants to react with isocyanates. This reaction is extremely fast (within a few seconds or minutes). As a result polyurea coatings tend to have a very limited pot life and their recoat time becomes a problem in cases when multiple coats occur. A polyurea linkage, however, will have better heat and high temperature resistance than a polyurethane system with polysyl as co-reactants.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] FIG. 1 is a perspective view of the invention.
[0017] FIG. 2 is a side cross-sectional view of the invention identified as 2 in FIG. 1.
[0018] FIG. 3 is a top view of the invention.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

[0019] The invention has a basic structure. The device 10 is basically rectangular in its configuration with an exterior portion 11 and an interior portion 12. There is a top surface 13, a bottom surface 14 and four sidewalls 15, 16, 17, 18. The exterior portion 11 is composed of a two-part polyurea elastomer for abrasion resistance, durability and lightweight construction. The interior portion 12 is composed of expanded polystyrene for its lightweight characteristics.

[0020] The top view in FIG. 3 illustrates how the corners 19, 20, 21, 22 have a rounded configuration. These rounded corners can also be seen in FIG. 1.

[0021] The illustrations and examples provided herein are for explanatory purposes and are not intended to limit the scope of the appended claims. This disclosure is to be considered an exemplification of the principles of the invention and is not intended to limit the spirit and scope of the invention and/or claims of the embodiment illustrated. Those skilled in the art will make modifications to the invention for particular applications of the invention.
What is claimed is:
1. An improved padding device for heavy equipment comprising
   an interior portion composed of expanded polystyrene;
   and
   an exterior portion, wherein said exterior portion is coated
   with a two part elastomer of polyurea for corrosion
   protection and abrasion resistance.
2. An equipment padding device as defined in claim 1
   wherein said exterior portion further comprises
   a top surface; and
   a bottom surface.
3. An equipment padding device as defined in claim 2
   wherein said exterior portion further comprises
   four side surfaces, said side surfaces being perpendicular
   to
   said top surface and said bottom surface.