The invention is a device and a method for manufacturing shaped elements, mainly from waste polymer material with additions of organic and mineral materials.

The aim was to develop a product with characteristic layers bonded in the form of an axisymmetric geometric solid. The novelty of the device lies in the introduction of the extrudate at 150˚C between spray nozzles, and application of mineral-organic material using compressed air. Then, successive layers of extrudate are wrapped onto the inner surface of the guide roll. At the same time, compressed air cools down the extrudate layers to 80˚C. With the position of the guide roll and the shaping roll set, the wound extrudate presses against it, and it is simultaneously moved to the shaping die. As a result, we obtain a shape polymer element in the form of a barrel, cylinder, or sphere. The invention provides a solution to the product obtained in the device, after thermal plasticizing and forming, which has characteristic layers arranged alternately, a thick layer made of waste polymer with organic-mineral additives, and a thin organic-mineral layer. Formed-shaped elements from the input material, which is polymer waste in the form of granulate, powder, or flake, are characterized by a compact structure. By introducing various additives to individual layers of the extrudate, it is possible to improve selected functional properties, increase strength or flexibility, enhance resistance to direct flame action, and more.