HOMEMADE PROTOTYPE OF PENCIL MATERIAL

Dry agricultural waste substituted by husk of coconut

Biodegradable adhesive used is homemade casein glue

Since the husk has been ground at home, it is coarse. In an industrial situation, it would be finely ground. Ideal pressure would be applied, which would compact the material. This homemade prototype is just a proof of concept.

Wood used to make conventional pencils has an average density of 0.45 g/cc. A block of this material has an approximate density of 0.43 g/cc. With precise measurements, the weight of a pencil made of this material can be the same as the weight of a conventional pencil, to maintain the standard.

UNIQUE SLAT SHAPE FOR ZERO WASTAGE OF MATERIAL

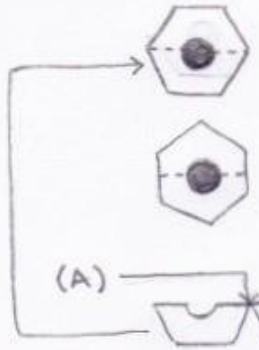
Conventional Wood Pencils

block of wood at beginning of manufacturing process

Out of these flat pieces of wood, called slats, the shaded portion is carved out and discarded

□ Used for making the pencil
■ Discarded

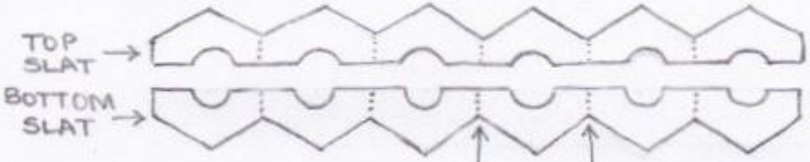
A LOT OF WASTAGE!



Orientation of pencil in conventional carved slat

Orientation of pencil in moulded slat design
This orientation allows the slats to be moulded with zero wastage without weakening the area where two pencils are joined in a slat

This can't be moulded because there is nothing to join them at (A)



dotted lines indicate where the slats will be cut after gluing

My Pencil Idea

The pencil body is not carved. It is moulded to the required shape. There is no material wasted at all in this design.

□ Used for making pencils

ZERO WASTAGE!