



1) What exactly is rice husk?

This is what is left after milling and the rice seed has been removed for processing and used as a foodstuff. The husk, which is approximately 25% of the total weight of rice, is regarded as a bio-waste product. The use of rice husk in Ricycled™ will not generate debate regarding foodstuff versus fuel or industrial use. For instance corn being used to generate bio-ethanol for blending into vehicle fuels.

2) How much rice is grown annually in Malaysia?

Malaysia produces some 2.3 million tonnes of rice per annum in 2 harvests (2009 figures). There are many other countries with larger rice crops. For instance it is believed that the annual rice crop in China might exceed 190 million tonnes.

3) Are there other uses of rice husk and when using it does that mean competing with food?

It is estimated that more than 60% of Malaysian rice husk is simply landfilled and over time will rot and produce methane, a chemical with 21 times the Global Warming Potential of carbon dioxide. Other uses include, as a fertiliser and as a low calorific fuel for in-situ steam generation at the premises of the rice millers. Rice husk is a true bio-waste generated as a by-product of the process and use of this does not compete with a foodstuff.

4) Is Ricycled™ a new product?

There have been other bio-composites brought to market with varying degrees of success. Some of these have even employed a similar raw material mix to Ricycled™. More often however, the fibre source is wood chip and the plastic is either polyethylene or polypropylene. If using wood chips then the tree has already been cut down. For every 1 tonne of Ricycled™ used in “substitution” to wood then some 3.3 tonnes of forest is left standing. The feel of the finished product when made with PVC is warmer and not like a plastic.

Ricycled Asia Pacific Sdn Bhd [899563-K]

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5) So what makes Ricycled™ stand out from other bio-composites?

The product performance in its ability to mimic wood, and then being able to compete across a range of product sectors from residential (decking boards, tiles, doorframes) to industrial (pallets, industrial flooring etc.).

6) What are the environmental benefits of using Ricycled™?

Firstly, the diversion of waste materials from landfill that would generate harmful greenhouse gasses, i.e. methane in the case of the rice husk. Use of this material in substitution to wood will leave 3.3 tonnes of trees standing in the forest. Overall this supply chain is carbon positive and may be eligible for carbon offset credits.

7) Has Ricycled™ been tested by third parties?

The product has been positively tested by FRIM & SIRIM in Malaysia and the test results are available on the web-site; www.ricycled.com. The material is strong, stable and resistant to acids, alkalis and hydrocarbons.

8) Will termites or other insects attack Ricycled™?

As the material has no nutritional value then termites and insects will not be attracted. A 10 year limited warranty can be provided against this.

9) What is the production process?

The rice husk (55% -> 60%) is combined with waste PVC (40-45%) and is then extruded through a die into various forms. The process has been patented.

10) What products have been made with Ricycled™?

A range of decking materials, including tiles have been manufactured and sampled. Also other residential products like door and window frames. Industrial applications include pallets and composite pipes, which have a range of uses. For all products, please see www.ricycled.com.

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11) What about discolouration with time?

Ricycled™ in its “natural” state without added colours or tints will not discolour over time. With colour added, the pigmentation will naturally fade over time. This is expected to be no worse than for timber products and the pigment can be protected with a simple polyurethane lacquer that will reduce the fading and enhance the added colourant.

12) What about Stability & Twisting?

All plastics, wood and some metals will expand and therefore, much like wood Ricycled™ will expand because of the PVC content. PVC expands at 1%. Ricycled™ products will be pre-expanded before leaving the factory.

13) Is Ricycled™ bio-degradable?

As PVC is currently used, the product will degrade at the rate for PVC. This is a good news bad news story associated with the plastic. The material is recyclable however and can be crushed and re-extruded into the same or a different product. The PVC is also recycled from waste, so in addition to the bio-waste usage (rice husk) the PVC is also a recovered material that would have generally been landfilled.

14) Lifespan?

Tests are being conducted on the material to ascertain what the actual lifespan could be. Again however, PVC is a plastic product that does not degrade quickly, Ricycled™ will mimic that profile. Again, a good news, bad news story.

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