Prime Coatings Utilithane

Product Selection and Description

Utilithane 1600, according to its manufacturer Prime Coatings, Inc., is a tough, flexible, abrasion and chemical resistant polyurethane used as a protective coating and liner for a broad spectrum of applications including concrete and steel substrates and roofs. Utilithane contains no solvents and meets all VOC regulations.[1]

Utilithane is a two-component system in which 2 parts of resin are mixed with 1 part activator, and is spray applied using plural component airless spray equipment. The product can be applied from 0.5 mm (20 mils) to 12.7 mm (500 mils) or more in thickness during a single application. Ultimate thickness specifications vary for each application depending on intended use and material applied. The application modeled for BEES is a Utilithane roof coating with an average applied thickness of 2.54 mm (100 mils).

The functional unit for Utilithane is 1 ft^2 of roof protection. Its density is 4.20 kg (9.25 lb) per gal and its coverage is approximately 148.6 m^2 (1 600 ft^2) per gal at one mil thickness. At this density and coverage rate, 0.26 kg (0.58 lb) of Utilithane are needed per ft^2.

Flow Diagram

This manufacturer considers this information confidential.

Raw Materials

This manufacturer considers this information confidential.

Manufacturing

Energy Requirements. Manufacturing involves electricity use for heating and mixing components. Prime Coatings provided data on the mixing vessel, times, and temperatures of mixing, and capacity of operation. The following energy requirements were modeled based on these parameters:

Table 1: Prime Coatings Utilithane Manufacturing Energy

Energy Carrier	*kWh/ ft^2*
Electricity	0.001
Natural gas	0.014

No air emissions data (except for those related to energy use) are available. Electricity and natural gas use in a boiler are modeled based on the U.S. LCI Database.

[1] See www.utilithane.com.

***Transportation*.** The resin components of the product are transported an average of 161 km (100 mi) to the manufacturing facility and the activator is transported 805 km (500 mi). Materials are transported by diesel truck, which is modeled based on the U.S. LCI Database.

Transportation

Both the resin compound and activator are transported 1287 km (800 mi) to the site of installation in 55 gal drums or 250 gal totes. Diesel truck is the mode of transport, and its environmental burdens are modeled based on the U.S. LCI Database.

Installation and Use

Installation of Utilithane requires the use of a compressor to mix and spray the product and a small electric heater to heat the product prior to application. Based on the manufacturer's data, the following installation energy requirements are modeled.

Table 2: Prime Coatings Utilithane Installation Energy

Energy Carrier	*kWh/ ft^2*
Electricity	0.004
Diesel fuel	0.04

End of Life

Utilithane has a useful life of over 50 years. At the end of its life, it is assumed to be disposed of in a landfill.

References

Life Cycle Data

National Renewable Energy Laboratory (NREL): *U.S. Life-Cycle Inventory Database*. 2005. Golden, CO. Found at: http://www.nrel.gov/lci/database.

PRé Consultants: *SimaPro 6.0 LCA Software*. 2005. The Netherlands.

Sheehan, J. et al., *Life Cycle Inventory of Biodiesel and Petroleum Diesel for Use in an Urban Bus*, NREL/SR-580-24089 (Washington, DC: U.S. Department of Agriculture and U.S. Department of Energy, May 1998).

Industry Contacts

Steve Crandal, Prime Coatings (2004)