

RFID Hard Tags for Severe Service

VisionMark introduces RFID encapsulations for use in difficult service environments. These sealed enclosures, sometimes called "hard tags," protect not only your RFID inlay from rain, UV radiation, and humidity, but they also resist yellowing and ink degradation that can cause the graphics and bar codes to fade. These enclosures also resist impact and even complete submersion in water.*

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We can manufacture these encapsulations in configurations to fit most RFID inlay plan forms using most engineering resins including ABS, Polycarbonate, HDPE, and Nylon 6.

The completed units allow both mechanical fastening and adhesive attachment on both metallic and non-metallic surfaces.

These RFID hard tags work well in these applications:

- ▶ Asset tracking
- ▶ Asset Management
- ▶ Parts distribution
- ▶ Protection against counterfeiting
- ▶ Hospital & electronic equipment
- ▶ Rack servers and routers



* TESTING METHODS:

Accelerated Aging - Heat

According to the Arrhenius Theory, chemical reaction rates double with every 10°C temperature increase. Using this theory, samples were aged for two, four, six, eight, and ten weeks at 70°C with a humidity of approximately 10% to 15%. This roughly corresponds to one, two, three, four, and five years real - time aging.

Accelerated Aging - UV

Test samples were cycle-aged in a Q-Panel Weatherometer with UVA 340 radiation. The cycle was eight hours of simulated daylight at 60°C followed by four hours of condensing darkness at 50°C. This cycle is approximately equivalent to ASTM G 154. Samples were removed from the chamber after 200, 400, 600, 800, and 1,000 total hours aging. There is no equivalence to real - time aging for this unit, but it can be useful when compared to control samples of known age durability.

All aged parts were submerged in water for 48 hours to verify the integrity of the seal. There was no evidence of water or moisture in any of the test samples. The testing process was complete after each tag was read and verified without any failures.

RESULTS:

All aged samples were returned to VisionMark for evaluation. All samples were visually acceptable after accelerated aging. Although some discoloration occurred, all print was readable. Testing was completed by an independent third party testing laboratory accredited to the requirements of ISO/IEC 17025 (2005)

Disclaimer: The conditions of your use and application of our product, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our product, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis at least must include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by VMI. All information is given without warranty or guarantee. It is expressly understood and agreed that customer assumes and hereby expressly releases VMI from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance and information. Any statement or recommendation not contained herein is unauthorized and shall not bind VMI. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent.

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RFID Labels

VisionMark provides a variety of RFID labels and hard tags in various sizes, form factors, constructions, and power levels. Our RFID labeling consists of an integrated circuit and antenna (the inlay) included in custom constructions, suitable for demanding applications. Our manufacturing processes include encoding your custom data in each label, plus final verification of the integrity of every transponder.

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VisionMark encapsulated RFID tag with integrated bar code and graphics



VisionMark enjoys partnerships with leading RFID inlay manufacturers to offer a comprehensive range of smart labels that are 100% verified, with or without encoding.

Call your VisionMark Customer Service Representative for additional information on VisionMark's custom AIDC products.