Pepin Manufacturing Addresses Adhesive Selection for Wearable Devices

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LAKE CITY, MN - September 14, 2026 -
Pepin Manufacturing, Inc. published new technical guidance on September 1, 2026, examining how adhesive selection affects wearable medical devices. The article, posted on the company?s manufacturing news page, reviews acrylic and silicone adhesives, ISO 10993 biocompatibility testing, and converting methods used to turn those materials into finished skin-contact parts.

The company stated that choosing the wrong adhesive for skin contact can increase irritation risk, delay development, or reduce patient use when a device becomes uncomfortable. According to the article, adhesive performance on wearable medical devices affects comfort, wear time, and product reliability. Applications discussed include continuous glucose monitors, cardiac biosensors, and drug-delivery patches.

Pepin Manufacturing compared two common adhesive families. Acrylic adhesives were described as suited to devices that must remain attached for several days and that encounter sweat, movement, and daily activity. The company listed typical uses such as continuous glucose monitors, long-wear ECG patches, and drug-delivery patches on healthy adult skin. Wear times cited in the article ranged from five to 14 days. The same section noted that acrylic adhesives can remove the top layer of skin during removal and may be less

suitable for pediatric, elderly, or fragile skin.

Silicone adhesives were presented as a gentler option for neonatal monitoring, wound-care securement, sensitive skin, and shorter wear. The article said silicone adhesives can often be repositioned and may reduce irritation, while typically supporting shorter wear times and performing less reliably during heavy perspiration or clothing friction.

Steve Yulga, Sales & Marketing Manager, stated: "The September guidance was written to help device teams match adhesive chemistry to wear time, patient population, and converting method before a design is locked."

He added: "Adhesive choice, biocompatibility testing, and converting all affect how a wearable part performs on skin, and those decisions are easier to manage early in development."

The article also addressed ISO 10993 testing for skin-contact materials. Pepin Manufacturing identified cytotoxicity, sensitization, and irritation as common tests and noted that contact duration changes the testing burden. Devices worn for less than 24 hours fall under limited contact, while many continuous glucose monitors and long-wear biosensors fall under prolonged contact. The company warned that changing adhesive chemistry mid-development can require repeating biocompatibility panels.

Converting methods were treated as part of device performance rather than as a separate production step. Kiss cutting was described as separating the adhesive and liner without cutting through the backing, which can support precise shapes and consistent dimensions. Island placement positions adhesive around a rigid sensor instead of directly beneath it, a construction the company said many wearable biosensors use. Multi-layer laminating was described as combining materials such as hydrogel, breathable film, medical-grade foam, and release liners into one component.

Pepin Manufacturing also listed real-world wear conditions that can differ from laboratory testing, including showers, exercise, humidity, clothing friction, sleep, and long work shifts. Skin type was identified as another variable, including pediatric, aging, sensitive, dry, oily, and medically compromised skin.

The company manufactures custom electrodes and other stick-to-skin components at its Lake City, Minnesota, facility, which it states is ISO 13485 certified. Pepin Manufacturing was founded in 1993 as a family-owned contract manufacturer and produces converted components in the United States for medical and related markets.

Pepin Manufacturing, Inc. is a family-owned contract manufacturer founded in 1993. The company states that it operates an ISO 13485-certified facility in Minnesota and manufactures converted components and finished products in the United States for medical, industrial, aerospace, consumer, and related markets.

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Pepin Manufacturing

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