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Taconite based pothole and road repair material (Road Patch)

A fast-setting road repair material comprising magnetite, phosphoric acid and appropriately sized aggregate material developed to address the needs of aging infrastructure.

Technology ID

2019-287

Category

Engineering & Physical Sciences/Materials

Engineering & Physical Sciences/Transportation

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Applications

- Potholes and road repair
- Quick setting building materials

Key Benefits & Differentiators

- **Longer life:** Patches are estimated to last 2X longer, resulting in decreased cost and reduced road maintenance interruptions
- **Labor savings:** Longer lasting repairs means potholes will need to be repaired less often
- **Utilizes waste products:** Utilizes waste taconite rock, a mining byproduct

Technology Overview

Researchers at the University of Minnesota's Natural Resources Research Institute have developed a material that addresses a national problem regarding road quality; specifically, quickly repairing aging roads with long lasting, durable, and weather-resistant patches. The Road Patch technology is a two-component (dry and liquid), fast-setting, taconite-based cementitious road repair compound for making longer-lasting repairs in concrete and asphalt pavements and other surfaces. Final set time is temperature-dependent, however on average, Road Patch can be driven or walked on within 15 to 25 minutes of mixing at temperatures above 55° F. Completing multiple repairs quickly to avoid lengthy, costly, and disruptive traffic control in a high-traffic situation like an interstate highway is a key priority (for example, MnDOT maintenance crews).

Phase of Development

TRL: 5-7

Field-scale material demonstrations have occurred in both Minnesota and Wisconsin.

Desired Partnerships

This technology is now available for:

- License
- Co-development

Please contact our office to share your business' needs and learn more.

Press Releases

Taconite-Based Pavement Patch, Natural Resources Research Institute

Researchers

- **Larry Zanko, M.S.** Minerals and Metallurgy, Natural Resources Research Institute
- **Sara Post** Minerals and Metallurgy, Natural Resources Research Institute
- **Dan Fosnacht, Retired** Minerals and Metallurgy, Natural Resources Research Institute