



# Fast-setting Materials for Expedient Pavement Repair

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**Objective:** Significantly reduce the time to create a minimum operating strip (MOS), increase resilience of the solution to non-ideal conditions, and to minimize interference with aircraft takeoff and landing procedures in hostile situations.

**Description of Effort:** This program seeks to improve the mission readiness for airfield runways. The primary aim optimize the ratios of Part A (epoxy), Part B (amine), and Part C (aggregate) to accommodate extreme environmental conditions (-40 to 140 °F). Phase II success criteria include: 60-minute cure time; safe, simple, rapid, and effective application; transportable solution; high strength and well bonded patch; cost savings compared to current fiberglass reinforcement covering.



, <http://en.dailyakistan.com.pk/world/more-than-100-saudi-led-air-strikes-hit-yemen213/>

## **Major Milestones:**

- ✓ Performed live demonstration at Minot AFB (-20 °F)
- ✓ Developed and refined the ratios of Part A, B, and C for two (2) formations to account for ambient temperature range of use
- ✓ Performed live demonstrations at Tyndall AFB (80 °F, with and w/o target site flooded with water)

## **Benefits of Proposed Technology:**

- Minimize interference with takeoff and landing procedures
- Loading equivalent to 100 passes by a C-17 transport aircraft

## **Challenges Addressed:**

- Determined rapid cure enhancements (additives)
- Strong bond with surrounding pavement
- Runway repair at the extreme temperatures and wet conditions

## **Maturity:**

- TRL 7

## **What's Next?:**

- Identify and actively communicate with end-users and stakeholders
- Transition the technology to DoD and commercial markets
- Perform more live field demonstrations under real-world scenarios (repair an actual runway after a simulated attack)
- Develop implementation procedures based on CONOPS and HAZOPS
- Design a system efficiently transport and distribute the epoxy patch using a minimum number of personnel
- Assist AF in drafting a Military Specification (if needed)
- Address purchasing, packaging, and shelf-life specifications
- Establish NSNs and become listed on DLA's QPL