



BEST PRACTICE: ENVIRONMENTAL SIMULATION OF LOW VELOCITY BLOWING SAND

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IN THE BEGINNING

Early simulation technology:

- Inability to deliver a proven particle concentration**
- No continuous real-time recorded data output**
- No single chamber to test both blowing sand and dust**

IN THE BEGINNING

- **No industrial hygiene systems in place to protect from silica dust exposure**
- **Maintenance issues with process components in the dirty air stream**

ADVANCING THE STATE-OF-THE-ART

New design and technology attributes:

- Turnkey, fully integrated, clean sheet design**
- MIL-STD-810G standards met/exceeded**
- Repeatable controlled environment, high temperature of 200°F/93°C**

ADVANCING THE STATE-OF-THE-ART

- **NIST calibrated instrumentation**
- **Automated control of temperature, velocity, concentration and humidity**
- **Repeatable proven concentration delivery system with real-time parameter output**

ADVANCING THE STATE-OF-THE-ART



ADVANCED TECHNOLOGY FOR TODAY

- **Data logging, reporting of all test parameters**
- **Integrated industrial hygiene systems for user protection**
- **Non-destructive use of simulation media**
- **Process component protection from wear and fouling**
- **Advancements in predictive tests and evaluations**

ADVANCED TECHNOLOGY FOR TODAY

Benefits include more precise:

- **Operations planning & readiness**
- **Equipment production**

ADVANCED TECHNOLOGY IN USE TODAY

- **U.S. Department of Defense**
- **Aerospace Technology Center – Montreal**

HOW IT WORKS

- **Automated material loading/circulation/waste system**
- **PLC control panel with LCD touch screen**
- **Viewing window into 3' x 3' test chamber**

TESTING IS SAFE . . .



- **Load test media through access door**

EFFICIENT . . .

- **Enter into touch screen control panel:**
 - **Particle type (dust or sand)**
 - **Concentration**
 - **Velocity**
 - **Temperature**
 - **Humidity**
 - **Test duration**

... AND EFFECTIVE



- View blowing test media and specimen through window



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