



WARREN

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Flood Damaged Machinery Analysis and Repair

Machinery and Equipment Damage Appraisal Guideline No. 200

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- Machinery subjected to flooding should not be operated until it has been cleaned and checked out.
- Try to clean machinery as soon as possible. Delay will make dirt and silt harder to remove and may cause considerable rusting and corrosion.
- Clean the exterior thoroughly with water spray. Scrub greasy deposits with solvent.
- Inspect the insides of machines and remove accumulated dirt, chaff, debris or water.
- Apply a rust inhibitor to all metal parts. Even though the machine may not have been submerged, rust can develop from dampness in the air.
- **Electric motors.** Electric motors may need to be reconditioned or replaced depending on size and cost to repair versus replace. Typically, 15 hp or larger motors should be repaired.
- **Wiring and fixtures.** Wiring and fixtures need to be checked and cleaned. They may also need replacement.
- **Centrifugal pumps.** Many centrifugal pumps contain two sets of oil-lubricated bearings along the drive shaft between the motor and the pumps. If the pump has been flooded, dismantle the housing and remove the bearings. Clean the bearings or install new bearings if the old ones are damaged or worn out.
- **Close-coupled centrifugal pumps.** Close-coupled centrifugal pumps contain no bearings. There is little chance of flood damage except to the seals and the electric motor.
- **Ejector-type pumps.** These pumps usually contain watertight packing at the ground surface, with sealed impellers. Floodwaters probably will not damage this type of pump.
- **Internal Combustion Engines.** Do not try to rotate or start an engine that has been submerged until it has been cleaned and reconditioned, since dirt will damage bearings and precision parts.

- **Chains.** Soak chains in solvent for several hours, then remove chains and allow solvent to drain out of them. Soak chains for several hours in light oil, then drain off excess oil and replace chains on machine.
- **Gears and sprockets.** Clean exposed gears and sprockets with cleaning solvent. Coat gears with light oil.
- **Gear cases.** Inspect enclosed gear cases for water or grit. Water may be present below the oil. If you find water or grit, or if you are in doubt, drain the case, flush it with solvent and refill with clean oil.
- **Belts.** Examine all belts for tears or cracks. Repair or replace them as necessary.
- **Cutting parts.** Remove knives and cutter bars from machinery. Clean and dry them. Coat cutter parts with light oil and reassemble.
- **Molds (Injection Molding-for example).** Break open as soon as possible. Clean and coat with light oil. If pitting has begun, buff immediately and coat with light oil. Note: time is of the essence. If not cleaned and oiled early, pitting will be too deep for molds to be repaired.
- **Hand tools.** Clean dirt and rust from surfaces of hand tools. Coat these tools with light oil.

