RAISED SAND

Massive, irregular metallic projections on the drag side of the casting, having the appearance of a fracture. The casting shows dispersed sand inclusions, especially on the cope surface.

Possible Causes
The same mechanism as defect A 222 but with dispersion of the detached sand. Possible occurrence of the phenomenon of sand expansion (seab) or defective ramming (two poorly adherent layers of sand).

Remedies
See A 222

MOLD DROP

All sand molding processes.

Massive, irregular projections having the appearance of a fracture on the lateral faces or in the corners of the casting. In general, the corresponding portion of the broken mold is found on the cope surface of the casting in the form of an inclusion of sand or missing metal. The defect occurs in a weak portion of the mold.

Possible Causes
— See defects A 221 and A 222.
— Poor gate location, permitting the stream of liquid metal to impinge against the mold wall.
— Poor condition of pattern or pattern plate.
— Poor slicking of parting line, from which a fragment of sand has been broken loose.

Remedies
See defects A 221 and A 222.
Effect mold repairs so as to avoid breaking during closing.

(Examples follow)
A 224 - Malleable Iron, Green Sand

Figure 24

Brake shoe.
Fragment of sand detached from drag half of mold before closing.

A 224 - Steel, Precision Investment Casting

Figure 26

Detached fragments of mold material in an investment casting, resulting in metal projections and numerous inclusions.

Cause: Poorly welded connection between the gate and the cluster pattern. The metal stream breaks off the projecting edges of the mold and entrains the fragments in the mold cavity.

Remedy: Assure proper attachment of gate to pattern.

A 224 - Aluminum alloy, Green Sand

Figure 25

Bronze collector ring.
Fragment of sand detached from drag half of mold before closing.