D 233
BLACKING SCAB

All ferrous and copper-base alloys cast in dry or hardened sand molds or in precision molds.

An extra thickness of metal on the casting surface, flat in shape, having a rough texture and generally with sharp sides and edges. If attached to the casting only at a few points it can generally be removed by means of a chisel. The surface of the casting beneath the scab, in this case, shows a slight depression. If the projection is solidly attached to the casting, the spalled coating having been displaced by the metal stream, one or more inclusions will be present. Such a scab can be eliminated only by grinding (assuming the corresponding inclusions can be tolerated).

Causes
The mold wash, often rich in clay, undergoes contraction when heated whereas the silica sand beneath the coating expands. If there is insufficient adherence of the coating, these two opposed movements can cause it to crack and peel away. As described above, the appearance of the defect will depend upon whether or not the peeled coating is dislodged by the metal stream as it fills.

Remedies
- Use a wash having less thermal contraction.
- Apply a thinner, more uniform wash coating, preferably using two applications to obtain the necessary thickness.
- Use a wash which wets and penetrates the mold surface.
- Use a sand having lower thermal expansion (see D 231 and D 232).