



PRODUCT DATA SHEET



PROFAX™ Ingot heading systems

SUMMARY

PROFAX refractory insulating tiles are designed to fit inside the ingot head and to reduce piping and segregation of all killed steels.

APPLICATION

PROFAX tiles form lining tops for ingot moulds and provide insulation and hence directional solidification and optimum feed. They are suitable for use on all killed steel qualities including rim-stabilised grades.

FUNCTION

It is important to reduce to a minimum the amount and position of pipe cavitation and to locate it where it will be least harmful in the solidified ingot. To achieve this, it is necessary to limit the chilled area of the ingot to the final body shape required and supply an additional quantity of metal to compensate for the liquid and solidification shrinkage within the chilled volume, delivered as required by gravitation and atmospheric forces. This extra metal, known as the feeder head, must be placed above the ingot chill area and be of a volume in excess of that required to satisfy the total shrinkage of metal by a satisfactory safety margin. PROFAX refractory insulating tiles maintains the ingot head in a liquid state until the whole of the body metal of the ingot has solidified. The feeder head should then contain all unacceptable segregation of such elements as sulphur, phosphorus and carbon.

BENEFITS

- PROFAX feeder heads used in conjunction with FERRUX/ KALTOP anti-piping compounds greatly improve the ingot-to-bloom or ingot-to-billet yield, the value of the extra usable metal far outweighing the heading cost.
- PROFAX material is light in weight, robust and flexible, lending itself ideally to use on all sizes of moulds.
- Tapered corner pieces compensate for slight mould differences, giving good wedging action in all circumstances.
- The shape of PROFAX insulating tiles and the wedging action of corner pieces minimises gaps between the assembly and the mould, eliminating shoulder flash which can result in flotation of assemblies/ surface problems within the vicinity of the head.
- The availability of a range of products ensures that all reasonable requirements of yield and environmental control can be met.
- Assemblies can be applied to warm moulds satisfactorily, providing care is taken to readjust the wedging action of the corner pieces immediately prior to teeming.
- PROFAX insulating tiles can be used at any level within the mould to produce ingots of required chill length by use of jigs or variable length clips.
- PROFAX insulating tiles can be used on all qualities of killed steel, and on rim stabilised steel.
- After use, PROFAX insulators form a powdery or partially sintered residue which strips cleanly from the ingot, thereby minimizing carry-over to soaking pits.

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