

**DEVELOPMENT OF RECYCLING PROCESS FOR USED
FERROUS-NICKEL SLAG AS ABRASIVE MATERIAL
IN SANDBLASTING OPERATIONS**

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ABSTRACT

A procedure for the recycling of the ferrous-nickel slag that is broadly used in open-dry sandblasting operations in Greek shipyards is presented. Laboratory tests were carried out, based on the reclamation of material fraction with particle's size within the range of 0.15 mm to 1.4 mm, in order to determine the number of effective uses (life cycles) of ferrous-nickel slag. These tests demonstrate that the reclamation yield in the first three life cycles is more than 80%. Moreover it is proved that the recycled material has comparable properties with the fresh material in terms of particle distribution, toughness, consumption and other physico-chemical properties. A semi-industrial recycling unit was also designed and installed in a Greek shipyard company (Neorion New SA Syros Shipyards). The operation of the semi-industrial recycling unit verified the conclusions resulted from the laboratory tests and most important it was proved profitable for the shipyard company.