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Coal — Froth flotation testing —

Part 2: Sequential evaluation

Charbon — Essais de flottation —

Partie 2: Évaluation séquentielle

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— updated title;

— document updated according to current ISO drafting rules.

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The froth flotation of coal has a widespread application for the recovery of fine coal particles and their separation from unwanted mineral matter. The response of coal to the froth flotation process is measured initially by a laboratory scale test. ISO 8858-1 provides a means of evaluating the general flotation characteristics of a coal under a set of specified conditions and will not necessarily indicate the full potential of that coal. It is accepted that variation of the many parameters in the froth flotation process can be used to effect the beneficiation of the product. This document describes a procedure for the more complete determination of the flotation characteristics of a coal, using the apparatus and basic procedures described in ISO 8858-1. The purpose of this extended procedure is to provide information similar to that provided by the sink/float curve, which is the basis for density separations. The data obtained are expressed as a yield/ash curve. The information can be used to define the limitations on the cleaning of fine coal by froth flotation.

The procedures specified in this document are of practical significance in the development and evaluation of coal-preparation-plant flotation circuits, although engineering design aspects, such as flotation kinetics and the selection of size and type of cell, are not addressed.

The flotation response curve (yield/ash) indicates the maximum possible yield at any specified ash content. The general shape of the curve indicates the sensitivity of flotation performance to the nature of the coal and to operating conditions.

The procedure may be modified to test and compare the performance of different frother and collector types, the assessment of liberation by grinding, and the comparison of alternative feed size ranges. However, results of such tests should clearly indicate any use of non-standard procedures.