

article, is the uniform scientific classification of the coals of the North American Continent as a whole which was evolved and later adopted after almost ten years of united research by the Committee of the American Society of Testing Materials, and the Canadian Associate Committee on Coal Classification that was set up in 1928 by the National Research Council of Canada.

The adoption of this classification made possible for the first time an accurate comparison of the coal deposits of Canada with those of the United States as shown on the map of the Coal Fields in Canada and the United States that appears in the 1946 article. Prior to this investigation, coal deposits in these two countries having identical chemical and physical characteristics were being assigned to different groups and even to different classes.

The classification of coals by rank is based on the fact that different coals represent different stages in the process of metamorphism from the original vegetation through the series of peat, lignite, sub-bituminous, bituminous, and anthracite, and that each of these stages shows a different percentage of fixed carbon content and a different calorific value as calculated on the mineral-matter-free basis (ash free). The higher rank coals are classified according to the percentage of fixed carbon on a dry basis, whereas the lower rank coals, i.e., those containing less than 69 p.c. fixed carbon, are classified according to B.t.u. per pound on the moist (as mined) basis. The limits of the thirteen groups and the four main classes are indicated in the following statement.

CLASSIFICATION OF COALS BY RANK
(American Society of Testing Materials designation 1937)

Class	Group	Limits of Fixed Carbon or B.t.u. Mineral-Matter-Free Basis	Requisite Physical Properties
I—Anthracite ¹	1. Meta-Anthracite.... 2. Anthracite..... 3. Semi-anthracite....	Dry F.C. 98 p.c. or more. Dry F.C. 92 to 98 p.c. Dry F.C. 86 to 92 p.c.....	Non-agglomerating.
II—Bituminous ²	1. Low Volatile..... 2. Medium Volatile.... 3. High Volatile A.... 4. High Volatile B.... 5. High Volatile C....	Dry F.C. 78 to 86 p.c. Dry F.C. 69 to 78 p.c. Dry F.C. less than 69 p.c. and moist ² B.t.u. 14,000 or more. Moist ² B.t.u. 13,000 to 14,000. Moist ² B.t.u. 11,000 to 13,000...	Either agglomerating or non-weathering. ⁵
III—Sub-bituminous....	1. A Coal..... 2. B. Coal..... 3. C ⁴ Coal.....	Moist ² B.t.u. 11,000 to 13,000... Moist ² B.t.u. 9,500 to 11,000. Moist ² B.t.u. 8,300 to 9,500.	Both weathering and agglomerating.
IV—Lignitic.....	1. Lignite..... 2. Brown coal.....	Moist ² B.t.u. less than 8,300.... Moist ² B.t.u. less than 8,300....	Consolidated. Unconsolidated.

¹ If coal is agglomerating it is classified in the Low Volatile Bituminous group. ² Moist B.t.u. refers to coal containing its natural bed-moisture, but not including visible water on the surface of the coal.
³ There may be coking and non-coking varieties in each group of bituminous coal. ⁴ Coals having 69 p.c. or more Fixed Carbon on a dry mineral-matter-free basis shall be classified according to Fixed Carbon regardless of B.t.u.
⁵ There are three varieties of coal in the High Volatile C Bituminous group, i.e., (1) agglomerating and non-weathering, (2) agglomerating and weathering, and (3) non-agglomerating and non-weathering.