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Prediction of Blended Coal Fluidity and Lateral Contraction of Coal in Coke Ovens -Technology for Increa

Prediction of Blended Coal Fluidity and Lateral Contraction of Coal in Coke Ovens —Technology for Increasing the Charging Ratio of Low Quality Coal in Cokemaking—*

Synopsis:

New models for estimating the maximum fluidity (MF) of blended coal and the clearance between the coke oven

fication process on the basis of Andrade's equation,[16] which is shown here as Eq. (7). The constant C_1 and the [illegible]

numerical values of the solvent viscosity at the softening point, solidification point, and maximum fluidity tem- [illegible]

ΔMF is 0.1 or under at low-grade coal blending ratios of 0–15%, confirming that the model enables improved [illegible]

The model consists of a heat transfer model, gas generation estimation model, coking pressure calculation model and contractile stress calculation model

3.2.1 Heat transfer model

The temperature distribution in the coal layer was

$$Q_i = D \cdot G_M + \sum_{i=1}^{k} G_i \quad \cdots\cdots (19)$$

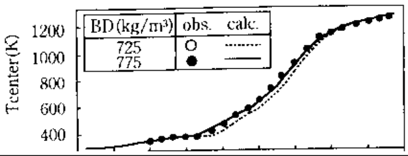
$$\Delta P_{coke} = \sum_{i=1} (Q_i \cdot Re_i) \quad \cdots\cdots (20)$$

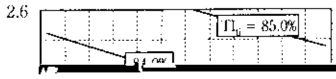
Here, k indicates the section number in the coke layer

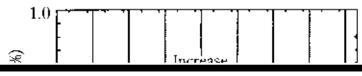
3.2.6 Calculation of clearance

(a) When Both a Melting Layer and a Coke Layer Are Present

The σ obtained from Eq. (28) and P obtained from




2.6
Π_g = 85.0%


1.0
%)