



چهارمین کنفرانس مشعل و کوره های صنعتی

تهران، ۲۹ خرداد ۱۳۹۳ هجری: هم اندیشان انرژی کیمیا

تلفن تهران: ۸۸۶۷۱۶۷۶ www.Koureh.ir

Manufacture of Modified Protective Coating for internal surfaces of furnaces(refractory)

Amin ahmadpour^{1*}, khashayar shakiby²

^{1*} National Petrochemical company-Bandar Imam Petrochemical Company-Research and Technology Center

² ham andishan energy kimia company.,

Email address: ahmadpour_amin@yahoo.com

Abstract

In this work, coal residue (pitch) was used to produce an inexpensive protective coating. The residue is primarily rehabilitated for just to be suitable for use as a coating material (reference coat) by dissolving it in benzene in a ratio of Pitch/Solvent(P/S) = 3:1 by weight. The reference coating was then mixed with polyurethane (commercial type) in percentages ranging from 5 to 15 % by weight of the solid tar pitch. Well mature mortar cubes (7x7x7cm) with a (w/c =0.4) and sand-cement (s/c= 2.75) were cast and covered with the prepared coatings. The cubes were then soaked individually in tap water, MgCl₂.5% conc. and H₂SO₄- 3.0% conc. for different periods of time. The last two reagents represent sea water and 5 years complete immersion in sewage water respectively. The effect of reagents on the compressive strength, water retention and weight was measured for the cubes. The results revealed that, all prepared coatings gave satisfied physical characteristics. Addition of PUR up to 10% by weight of coal residue produced coating materials with the most favorable physical and chemical behavior.

Keywords:

Pitch – Coating – Sea water – mortar- furnace- refractory