

伸管用低スラッジ型りん酸塩処理剤の開発
Development of Low Sludge Phosphating for Steel Tube Drawing

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抄 録

りん酸塩処理は、鋼管の伸管加工の潤滑下地処理として未だに広く使用されている。りん酸塩処理は、油や反応石鹼などの潤滑剤と組み合わせられ、優れた加工性能を発揮し、処理プロセスが簡便でコストも低いなどのメリットを有している。反面、スラッジが多いなどの環境負荷も大きいことが問題視されている。新たな添加剤の配合と組成改良にて、管材内面へのりん酸塩の付きまわり性を向上させ、皮膜結晶を均一で緻密にすることで、抽伸性能を向上させ、且つ、スラッジの発生を抑制した環境対応型のりん酸塩処理剤・パルボンド 3610X を開発した。工業生産した場合に、従来に比較して、スラッジを低減することができ、優れた加工性能が得られている。

ABSTRACT

The phosphate process has been widely applied as a base treatment in combination with such lubricant as oil or reactive soap for steel tube drawing. Even if there are some advantages of the conventional phosphate coating such as higher productivity and lower cost, there are some environmental drawbacks with respect to higher energy loss, involved wastewater treatment and sludge generation.

The development of the new chemical, called "PALBOND 3610X" for steel tube drawing, by introduction of additive agents and modification of chemical components made it possible to improve tube drawing performance and to generate less sludge, as throwing power of applied chemicals into tube interior was enhanced and formed phosphate crystal was much more uniform and fine than the conventional type.

We call this new type of coating process as "Environmental Friendly Phosphate Process". Superior tube drawing performance with less sludge generation by this new process can be achieved when it is commercialized as compared to the conventional type.