

Latest Development about Inorganic Sand Reclaim Technology

Yuankai Shi^{1,*}, Yanxia Ma²

1. Product Manager, Shanghai HA International Trading Co., Ltd, Room 1003, No.26 Taxi Road, Jiading District, Shanghai, China

2. Vice General Manager, Shanghai HA International Trading Co., Ltd, Room 1003, No.26 Taxi Road, Jiading District, Shanghai, China

*Corresponding address: e-mail: Kevin.shi@ha-group.com

Abstract : Under the pressure of strict environmental protection requirements of the country, many automotive component companies have begun to use inorganic binders, which are environmentally friendly materials. The regeneration of inorganic binder waste sand is the most crucial step in completing the entire environmental protection loop, and many domestic and foreign companies have invested a lot of experience in researching.

At present, the regeneration technology of inorganic waste sand has become mature, but the quality control of recycled sand and the special application need to be strengthened.

This article introduces and shares the characteristics of inorganic binders, inorganic sand regeneration technology, quality control of inorganic recycled sand, and the current application status of inorganic recycled sand in China through market research and experimental data. Hope to provide certain reference significance for relevant companies.

Keywords: inorganic binder system; sustainability; sand reclaims process

1 Introduction

- 1, Background and significance of the research
- 2, General introduction of inorganic binder system
- 3, Current situation of inorganic binder system reclamation technology and performance.
- 4, key control point of IOB reclaim sand
- 5, conclusion

2 Experimental procedure

1. customer information collection

2. collaboration with customer
3. reclaim sand key control points set up
4. sample checking in Lab
5. SEM and EDS checking
6. parameter analysis

3 Result and discussion

Current application status of inorganic sand regeneration technology

IOB reclaim sand technology has been maturely applied in certain customers. But quality control need strengthen.

Key control points of IOB reclaimed sand.

Electric conductivity, PH values and ADV are the mainly detect method for IOB reclaim sand.

Influence of IOB reclaim sand quality.

Un qualified IOB reclaim sand will have bad influence on core making sand core storage. Sand flowability will decrease and core curing time will increase if residue binder exists on reclaim sand.

4 Conclusion

According to the best environment friendly performance, inorganic binder system become more and more popular in foundries, especially in aluminum foundries. Recycled sand has completed the closed loop of the entire process.

Thermal and mechanical treatment process is the mostly used process in China market, some customers are using wet process.

To maintain the stability of reclaimed sand, electric conductivity, pH value, ADV and core strength performance are the mainly parameters need control.